THE ADEQUACY OF CORPORATE MANDATORY DISCLOSURE PRACTICES ON EMERGING MARKETS: A CASE STUDY OF THE ZIMBABWE STOCK EXCHANGE

A thesis submitted in fulfilment of the requirements for a degree of
Doctor of Philosophy

by

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to the

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Respectfully dedicated to my wife, son, parents, brothers and sisters.

DECLARATION

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I also declare that materials included in this thesis that are not my work have duly been acknowledged and referenced in the text, footnotes and bibliography. The usual disclaimer applies; that is, the analysis, opinions, policy recommendations, and factual errors herein are not necessarily those of the individuals and institutions whose works I consulted in the conduct of the investigation, but mine.

Signed: .....

Stephen Owusu-Ansah

March, 1998.

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ABSTRACT

This research study is descriptive, normative and empirical in scope. The main purpose of the study, reported in this thesis, is to empirically investigate the "adequacy" of mandatory information disclosure practices of public companies listed on an anglophone African stock exchange classified as an emerging equity stock market by the International Finance Corporation (IFC), and to assess the "stringency" of the disclosure regulatory regime of that market. The study also investigates the characteristics of the relationship between some selected corporate attributes and mandatory disclosure. The corporate attributes examined are: company size, audit quality, ownership structure of equity shares, industry-type, company age, multinational corporation affiliation, profitability, and liquidity.

A sample of 49 non-financial companies listed on the Zimbabwe Stock Exchange (ZSE) as of 31 December 1994 formed the basis of the conclusions reported in this thesis. To measure the "adequacy" of mandatory disclosure in the annual reports and accounts of these companies, a disclosure measuring instrument was constructed consisting of information items required by companies law, financial accounting standards, and listing rules of the ZSE. Applying the measuring instrument against the annual reports and accounts of the sampled companies, their mandatory disclosure scores were obtained, and were used with other data specific to each sample company to test the relational hypotheses.

To investigate the adequacy of mandatory disclosure practices of the sample companies, a descriptive statistical analysis was undertaken. The results of this analysis suggest that the amount of mandated information disclosed in the annual reports and accounts of these companies is inadequate for the information needs of users of annual

reports and accounts in Zimbabwe. There were several instances where none of the sample companies disclosed the required information items.

In another respect, the stringency of the disclosure regulatory regime of the stock exchange was empirically assessed with both a Paired sample *t* test and Wilcoxon signed-rank test. The results of these tests indicate that the disclosure regulatory regime of the stock market is less stringent. Although it has an elaborate monitoring and enforcement mechanisms, it failed to secure full compliance with its disclosure requirements in practice as there were several instances of non-compliance.

To ascertain the nature and the strength of the relationship between the corporate attributes and mandatory disclosure, both correlation and multivariate regression analyses were undertaken. The results of the correlation analysis showed that only company age has a significant positive relationship with the extent of mandatory disclosure. In contrast, a robust regression analysis indicated that company size, ownership structure, company age, multinational corporation affiliation, and profitability are positively significantly associated with the extent of mandatory disclosure in Zimbabwe. Thus, of the eight corporate attributes, only company size, ownership structure, company age, multinational corporation affiliation, and profitability "best" explained mandatory disclosure behaviour of the sample companies.

On the whole, the results of this study provide support to the general view and prior studies that disclosure practices of emerging equity stock market listed companies are inadequate due to weak monitoring and enforcement of disclosure requirements.

It is recommended in this study that the disclosure regulatory regime should be made stringent to minimise non-compliance with requirements by increasing the number of annual reports and accounts of public listed companies that is reviewed annually under the existing monitoring and enforcement mechanisms. This will ensure that each listed company is subject to the review process, at least, once in every three years.

PREFACE

The thesis is the culmination of over 17 years' aspiration. The desire to undertake a research study of this kind arose when I was first taught, the importance of stock exchanges in the mobilisation of resources for economic development of any country, developed or emerging, at Kumasi High School in Ghana in 1981. The research for this thesis began in September 1994 at The Queen's University of Belfast, United Kingdom. I transferred to the Middlesex University, England in September 1996 to complete the research under the supervision of Dr. Reginald Sylvanus Olusegun Wallace, Research Professor of Accounting and Finance.

For many years, economists considered indigenous government fiscal and monetary policies, and foreign aid as the primary factors influencing economic development and growth in emerging economies. Of late, however, the emphasis has been on the importance of domestic financial market for economic development and growth. An aspect of financial market that has received increasing attention of development agencies, academics, and practitioners is the importance of domestic capital market, primarily the equity stock market, as an effective mechanism for the accumulation and allocation of both domestic and foreign capital. It has been established in the literature that economic development and growth depends, among other things, on a fair securities market (see, for example, Sedaghat, Sagafi-nejad and Wright, 1994). For a securities market to be fair; it requires adequate supply of information on the listed securities. Thus, securities market relies substantially on corporate financial disclosure to facilitate both the processes of securities valuation, and allocation of investible capital.

Adequate corporate disclosure can be assured if the disclosure regulatory regime is stringent. Consequently, disclosure practices of companies listed on stock exchanges

in emerging economies seem a subject well worth exploring by and for those with keen interest in the improvement of corporate financial reporting and securities regulation in these economies. In this regard, Wai and Patrick (1973, p. 302) suggested that "the most profitable line of research would be in detailed case studies of capital markets in specific *developing* countries . . . " (Emphasis mine). It was this challenge that I decided to accept in September 1994 when I chose the ZSE as the context of my doctoral research.

The thesis is structured in the following manner. It consists of five different, but inter-related parts. Part A contains three chapters that provide the general background to the study and an overview of the regulatory framework for financial reporting and accounting of the private sector in Zimbabwe. Chapter I presents the aims of the study and the four principal research questions investigated. It also sets the scope within which the study was undertaken. This chapter also reviews the main literature relevant to my research questions. The microstructural characteristics of the ZSE are examined in Chapter II. Chapter III provides a comprehensive discussion of the regulatory regime governing the publication of annual reports and accounts of public companies listed on the ZSE. Included, in this chapter, is a description of the institutions involved in the monitoring and enforcement of corporate compliance with regulatory requirements.

The theoretical framework underpinning the study is contained in Part B which consists of two chapters; each examines extant theories of corporate disclosure and regulatory enforcement. While Chapter IV reviews regulatory and free market theories of corporate disclosure, Chapter V reviews three competing theories of regulatory enforcement.

Part C provides the background material for the statistical analysis conducted in this study. This part contains five chapters; beginning with Chapter VI. This chapter presents discussion of the contextual definition of disclosure as well as the conceptual

and operational definitions of adequate disclosure. It also provides a literature review of the methods of measuring the extent of disclosure in corporate annual reports. It ends with the reasons for choosing the particular methodology employed in this study.

In Chapter VII, the testable hypotheses that formed the basis of the empirical investigation are introduced. Hypotheses relating to the second, third and fourth research questions are discussed. Chapter VIII describes the procedures employed in obtaining the annual reports and accounts of the sample companies and other data used. It also describes the sample companies and explores the relationship between them and the population from which they were drawn. The procedures employed in constructing a disclosure measuring instrument and the scoring of the annual reports and accounts of companies in the sample are detailed in Chapter IX. This chapter also presents discussion of the reliability and validity of the measuring instrument. Operational definitions of concepts and measurement of variables are contained in Chapter X.

The Part D consists of three chapters which are concerned with data analysis and the interpretation of the statistical results. Chapter XI describes the statistical methods employed in the analyses of the first three research questions. This chapter also discusses the results of these statistical tests in the context of the hypotheses for these research questions. The final part (Part E) contains the appendixes and the details of prior studies consulted and cited in the text and the footnotes of the thesis.

The results of the study of the relationship between selected corporate attributes and disclosure are presented by Chapter XII. This chapter dwells entirely on the fourth principal research question. It also presents the testable hypothesis and the econometrics techniques employed to answer this question.

Chapter XIII concludes the study. It presents a brief summary of the major results of the empirical study. The implications of the results and limitations of the

research design are discussed, and suggestions for further research in this area are provided.

This thesis has been written in accordance with the guidelines published in the University's regulation. Where the University's regulation is silence as to what to do such as line spacing between major sections and sub-sections, and that between tables, figures and preceding and proceeding texts, I follow the guidelines in Turabian (1996) which is based on the fourteenth edition of *The Chicago Manual of Style*; first published by The University of Chicago Press in 1937. The Chicago Manual is used by reputable universities throughout the world as the basis of their guidelines for Ph.D. theses in humanities, social sciences, and natural sciences.

In referencing academic journals in the bibliography section, articles before the names of some journals like "the," "a," and "an" are omitted. For instance, "The Journal of Accounting Research" is cited as "Journal of Accounting Research" in the bibliography section.

Also, where a name of an institution referred to in this thesis is long and needs to be referred to on several occasions, the full name is stated, when the name of the institution is first mentioned, with the acronym by which it is widely known in parenthesis. This acronym is used in place of the full name of the institution for any further reference. For instance, the Institute of Chartered Accountants of Zimbabwe is referred to by its acronym (that is, ICAZ) after the first mentioning in the thesis.

For greater validity and reliability of the results of this study, both parametric and non-parametric descriptive and inferential statistical analyses were used throughout. The statistical computations were conducted and the graphs produced with both SPSS for Windows (Release 7.5), and Stata Statistical Software for Windows 95 (Release 5). All graphs, charts and diagrams are referred to as figures and consecutively numbered in Arabic numerals, with descriptive titles, within the chapter they appear.

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First, I thank the Almighty God for my being. Without the grace and love of the Living God, His only begotten son, Jesus Christ, and the Holy Spirit on my family and I over all these years, what has been achieved to date could not have been possible. Unto God be the glory!

The initial inspiration to undertake a study of this kind was candled when I first met Mr. Felix Adu Nyame in London after the completion of my post graduate studies at the University of York. Mr. Adu Nyame encouraged me to take up a doctoral study, and continuously reminded me of this. He played a major role between the period I was offered an admission and a scholarship by The Queen's University of Belfast to undertake a research study toward a doctoral degree and the period I was re-locating to Belfast to begin my studies in September 1994. I am indeed grateful to Mr. Adu Nyame for the encouragement, inspiration and the numerous assistance he has offered me since our first meeting in 1991.

I acknowledge the initial financial assistance of The Queen's University of Belfast toward this study. It was unfortunate that I had to resign from this University after spending almost two years with them. Many thanks are due to all academic, administrative, and secretarial staff in the Department of Accounting and Finance of that University for their kindness and friendship. I acknowledge the contributions of Professor Donal McKillop, Professor John Forker, Dr. Charles Hickson, Dr. Titus Oshagbemi, Mr. George Radcliffe, and Mrs. Beverly Carroll. In particular, Professor

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I would like to acknowledge with sincere thanks the contribution, counsel, and financial support of my supervisor, Professor Wallace. Indeed, it was a privilege for me to learn at his feet. His constructive criticism and suggestions, welcoming attitude, generosity, and long experience in academia have been an invaluable asset. I also acknowledge the counsel of his wife, Mrs. Rosemary Wallace.

Mr. Peter Babangida Oyelere, a former colleague at Queen's University and a friend, assisted immensely by obtaining relevant materials for me. He also read most of my draft chapters and offered useful suggestions. Quite apart from these, his unflagging support and encouragement kept me going in my darkest moments. Indeed, I owe Mr. Oyelere a debt of gratitude!

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Many thanks are also due to the Middlesex University for their financial and administrative support, and for admitting me, in the first place, into the Business School half way in the research study to complete it there. I acknowledge the help of the staff

of the libraries of Middlesex University Business School at Hendon, and London School of Economics and Political Science and the British National Library in London.

Finally, I owe a debt of gratitude that will be difficult, if not impossible, to discharge to my wife, Victoria May Bruce (maiden name), and our little boy, Daniel, who was born during the period of the study. Daniel and his mum have suffered for this thesis. I can not thank May enough for her maturity, unflappable patience, understanding, assiduousness, and above all, her love for Daniel and me. Her spiritual and moral support have been a great asset. I thank her for her sacrifices during the period of this study, and especially for giving up her lucrative job as a private secretary to the managing director of a private road construction company in Kumasi, Ghana to join me in the United Kingdom. I owe my success to her.

LIST OF ABBREVIATION

AGC	Ashanti Goldfields Company Limited
AGM	Annual General Meeting
AICPA	American Institute of Certified Public Accountants
ANOVA	Analysis of Variance
APB	Accounting Practices Board
APC	Accounting Procedures Committee
ASC	Accounting Standards Committee
APSC	Auditing and Professional Standards Committee
BLS	Biweight Least Squares
CAPM	Capital Asset Pricing Model
CCASB	Consultative Committee of Accountancy and Secretarial Bodies of Zimbabwe
ECSAFA	Eastern, Central and southern Africa Federation of Accountants
EMH	Efficient Market Hypothesis
FASB	Financial Accounting Standards Board
FRRP	Financial Reporting Review Panel
FRS	Financial Reporting Standard
GDP	Gross Domestic Product
IAS	International Accounting Standards
IASC	International Accounting Standards Committee
ICAZ	Institute of Chartered Accountants of Zimbabwe
IFAC	International Federation of Accountants
IFC	International Finance Corporation
LAD	Least Absolute Deviations

LMS	Least Median of Squares
LSE	London Stock Exchange
MNC	Multinational Corporation
MPT	Modern Portfolio Theory
NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
SSAP	Statement of Standard Accounting Practice
SEC	Security and Exchange Commission
UK	United Kingdom
US	United States of America
ZECO	Zimbabwe Engineering Company
ZSE	Zimbabwe Stock Exchange

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PART A

GENERAL BACKGROUND TO THE STUDY

CHAPTER I

INTRODUCTION AND BACKGROUND TO THE STUDY

> Science is an enterprise dedicated to 'finding out.' No matter what you want to find out, though, there are likely to be a great many ways of doing it. That's true in life generally.
>
> (Babbie, 1994, p. 83)

This chapter presents the aims of the study and defines its underlying problem that gave rise to the four principal research questions empirically investigated. It also reviews the main literature relevant to my research questions to provide a framework for this study. Further, the chapter specifies the boundaries of the study.

The Aims of the Study

The primary aims of this study are to:

(a) Investigate the "adequacy" of annual mandatory disclosure and reporting practices of companies listed on the ZSE,

(b) Assess the "stringency" of the annual mandatory disclosure and reporting regulatory regime of the ZSE,

(c) Use company-specific attributes to explain annual mandatory corporate disclosure and reporting behaviour in Zimbabwe, and

(d) Offer recommendations for improvement in securities regulation and financial disclosure and reporting in Zimbabwe.

Statement of the Problem

Several writers (for example, Gandhi, Saunders and Woodward, 1980; Cooper, 1982; Dawson, 1984; Dickinson and Muragu, 1994; Huang, 1995) have tested the efficient market hypothesis (EMH) on emerging stock markets, and have found them to be informationally inefficient. They ascribe this to several factors including inadequate and poor quality of information disclosed by listed companies. Dawson (1984, p. 153) was more specific when he stated:

> Common explanations for the less frequent findings of market efficiency *in undeveloped, unsophisticated stock markets* include less stringent information disclosure requirements . . . less information released by companies; and less rigorous accounting regulations. (Emphasis mine)

There are several examples of such assertion in the finance literature. Theoretically, they are valid in the sense that if prices of securities listed on these markets do not reflect the intrinsic value of the assets they represent, then, there must be a problem with the state of the mandatory (compulsory) accounting information disclosure requirements. However, the empirical validity of such assertions, in particular, the "stringency" of disclosure regulatory regime has not been tested adequately. Prior studies that examined this aspect of the financial reporting and disclosure requirements of emerging stock markets are descriptive in nature (see, for example, Pillai, 1986; Elad, 1992). There is almost no empirical study that has addressed, in greater detail, the "stringency" of disclosure regulatory regime of equity stock markets. This study, therefore, seeks to address empirically the following four principal research questions:

(1) Can the mandatory disclosure practices of the ZSE listed companies be considered "adequate" in meeting the information needs of users of corporate annual reports?

(2) Can the extent of mandatory disclosure practices of the listed companies be ascribed to the stringency of disclosure requirements of the ZSE?

(3) Can the differences in mandatory disclosure practices of the companies listed on the ZSE be explained in terms of certain corporate attributes?

(4) Can the identified corporate attributes be used to explain the extent by which a listed company has complied with the mandatory disclosure requirements of the ZSE?

Although the detailed analysis pertains only to the ZSE, the general conclusions may apply to other emerging stock markets. The ZSE is an appropriate context for this study for several reasons. First, the ZSE is the second oldest (after Johannesburg) equity stock market in Africa, and yet little is known about it.[1] It was established in 1945, and was then known as Rhodesian Stock Exchange. It is also the second largest (after Johannesburg) in terms of total market capitalisation. Its total market capitalisation was about Z$50 billion (US$4.8 billion) as at September 1996.

Second, it is one of the constituent markets of the IFC's Global and Investible Indexes. This made the retrieval of some information on the market relatively easier considering poor record keeping in most emerging economies. Also, because of IFC's involvement, data on the market can reasonably be considered to be accurate and reliable.

Third, Zimbabwe is one of a few countries in the world to adopt the standards of the International Accounting Standard Committee (IASC) as national accounting standards. International Accounting Standards (IASs) are considered by the accountancy profession in Zimbabwe as the most authoritative and independent guide to what might constitute good financial reporting and disclosure practice. Generally, it is assumed that

[1] The only published study on this market known to the present investigator is that of a price-earning ratio research by Oppong (1993).

the use of IASs ensures the provision of adequate information by listed companies on their securities for optimal investment decision-making purposes. Furthermore, some African countries that adopted IASs as their national standards with modification to suit their local social, cultural, political and economic environments have been found in an empirical study to have significantly higher rates of economic growth than those countries either ignoring IASs or adopting IASs without modification (Larson, 1993).

Peasnell (1993) has, however, cautioned that though the conclusion in Larson (1993) is very attractive, it should be treated with care. He argued that poor countries simply can not devote much of their already limited resources to the modification of IASs to reflect local conditions, and therefore have little choice other than to wholesomely adopt IASs or ignore them altogether. Added to Peasnell's argument is the results of a recent study which suggest that countries that had adopted IASs had lower equity market development and lower economic growth than countries that had not adopted IASs (Larson and Kenny, 1995). Nevertheless, the inconsistency of the findings of Larson (1993) and Larson and Kenny (1995) coupled with Peasnell's argument make the present study potentially useful. The findings of the present study will have policy implications for the country as a whole. For instance, if it is revealed that the existing disclosure regulatory regime is inadequate and lax, the stock exchange, in collaboration with the Institute of Chartered Accountants of Zimbabwe (ICAZ), may consider taking appropriate measures to improve securities regulation, and financial reporting in Zimbabwe.

Finally, compared with other emerging stock markets, the ZSE is relatively small in terms of the number of listed companies (64 as at 31 December 1994) it is, however, significant in terms of the volume of trade and total market capitalisation. For instance, it ranks 31st. in a sample of 47 of the world's emerging capital markets covered by the IFC, in terms of market capitalisation (in US dollar) as at the end of 1993 (IFC, 1994).

Review of the Relevant Literature

For the purposes of the literature review, only hypothesis-testing studies (Jaggi, 1973) in accounting were considered. Although this study focuses on mandatory disclosure in an emerging economy, the literature review was not limited only to this type of disclosure in emerging economies. Mandatory disclosure studies on developed economies and voluntary disclosure studies were considered as well. However, no attempt was made to analyse in greater detail the findings of individual country studies from either group of economies as they would have proved repetitive and impractical, because many of the studies differ only in sample size, the number of disclosure items, the year of study, the type and number of corporate characteristics examined, and the country (or countries) on which the studies were conducted. The details of some of these studies are, however, provided in Appendix A. Only the core studies were analysed in greater detail. These studies are either classical or recent, and are considered by this investigator, to have immensely influenced the thinking of researchers in this area. In reviewing each of these studies, the present investigator: (1) states the principal objective of the study, (2) describes the research design employed, (3) describes the important results reported, and (4) highlights any major weaknesses of the study.

An aspect of corporate financial reporting and disclosure that has received much attention from academics, professional accountancy bodies, and international accounting firms is the extent to which the information needs of external users of corporate annual reports have been met in different countries. Cerf (1961) pioneered an empirical investigation into the extent to which the financial reporting and disclosure practices of US companies meet the information needs of users of corporate annual reports. He numerically rated the 527 individual companies in his sample on the basis of their

disclosure practices by establishing an index of disclosure. The index consisted of 31 information items considered to be important or desirable by financial analysts in their investment decision making. Each company in his sample was given a percentage score which is a function of the number of items in the disclosure index included in that company's annual report. His findings indicated that the financial reporting practices of many US companies need improvement. He also observed significant differences in disclosure which appeared to be a function of a variety of corporate characteristics including asset size, number of shareholders, and profitability.

Following Cerf's (1961) path-paving study, a number of similar studies have been undertaken in several different countries. For instance, in the US (Singhvi, 1967; Singhvi and Desai, 1971; Buzby, 1974b; Stanga, 1976; Imhoff, 1992; Malone, Fries and Jones, 1993; Lang and Lundholm, 1993); in Canada (Belkaoui and Kahl, 1978; Amernic and Maiocco, 1981); in Spain (Wallace, Naser and Mora, 1994; Inchausti, 1997); in the UK (Firth, 1979a; 1979b, 1980a, 1984; Spero, 1979); in Switzerland (Raffournier, 1995); in Sweden (Spero, 1979; Cooke, 1989a, 1989b, 1989c); in the Czech Republic (Patton and Zelenka, 1997); in Japan (Cooke, 1991, 1992, 1993); in New Zealand (McNally, Eng and Hasseldine, 1982; Hossain, Perera and Rahman, 1995); in South Africa (Firer and Meth, 1986); in Nigeria (Wallace, 1987); in Mexico (Chow and Wong-Boren, 1987); in India (Singhvi, 1967, 1968[2]); in Hong Kong (Tai, Au-Yeung, Kwok and Lau, 1990; Wallace and Naser, 1995); in Thailand (Priebjrivat, 1991); in Malaysia (Hossain, Tan and Adams, 1994); and in Bangladesh (Ahmed and Nicholls, 1994; Nicholls and Ahmed, 1995).

Each of these writers has either improved on (or modified) Cerf's (1961) research design or on each others' work in one way or the other according to their research

[2] This was the first study to introduce hypothesis-testing research to accounting problems in emerging economies and, was the only known study existing of that nature at the time Jaggi (1973) was assessing accounting studies on emerging economies.

objectives. For instance, it was Cerf's study which first investigated the association between some selected corporate attributes including company size, listing status, and profitability and level of corporate disclosure. He, however, did not test for the statistical significance of these associations. Cerf (1961, p. 32) established the existence of these associations by analysing the means of classes (that is, tests of difference). Singhvi and Desai (1971) argued that such analysis of class means is not sufficient as each class of companies does not have equal number of observations, and as a consequence, the average for a class is more likely to be influenced by the extreme values (Singhvi and Desai, 1971, p. 131). They adopted Cerf's (1961) data, and added two more explanatory variables, namely, the influence of audit firm and company's earnings margin. Using a Chi-square test, Singhvi and Desai found positive association between company size (measured by asset size), number of shareholders, profitability (measured by rate of return and earnings margin) and the quality of disclosure. Also, employing a *Z* test, they reported that the differences between the mean scores of listed and unlisted companies, and those audited by large and small certified public accountants' firms were significant. A multivariate regression procedure, however, indicated that only company listing status explains significantly the variation in the quality of disclosure. Like Cerf (1961), they did not investigate possible existence and the nature of multicollinearity among the explanatory variables used in the regression model.

In their commentary, Moore and Buzby (1972) identified several problems with the research design of Singhvi and Desai's (1971) study. Particularly, they criticised the assumption implicit in Singhvi and Desai's use of absolute scores that the absence of an information item from a company's annual report indicates non-disclosure. They argued that not all the information items included in the disclosure index may be applicable to individual companies in the sample. To allow for this, they suggested the use of a score

that represents a ratio between what should have been disclosed by a particular sample company and what was disclosed by that company. In other words, Moore and Buzby recommended the use of a relative index. Conceptually, the relative index is better especially if the sampled companies are in different industries. This explains why Buzby (1975) used that measure as the dependent variable in his model, though, he calculated two additional disclosure scores: maximum and actual. In another study, Cooke (1989a) acknowledged the difficulty in discerning whether or not an item of information is relevant in the case of non-disclosure. He mitigated this problem by reading thoroughly the entire annual report of his sampled companies to be certain that an item of information was, in fact, either not disclosed or irrelevant to a particular company. As pointed out earlier, Singhvi and Desai (1971) did not measure the degree of the statistical association between the quality of disclosure and the selected corporate characteristics. The importance of this measure has, however, been pointed out by Hays (1963, pp. 323-327).

Furthermore and equally significant, Moore and Buzby (1972) criticised Singhvi and Desai for using Chi-square test to measure the associations between the quality of disclosure, and four of the selected corporate characteristics. They suggested the use of a more direct measure of correlation such as Kendall's tau, a better alternative to the Chi-square test. They argued that since the data were in ordinal scale they could have been ranked.

In another vein and as noted earlier, Singhvi and Desai (1971) did not investigate for any possible problem of multicollinearity among the explanatory variables used in their regression model; Moore and Buzby (1972) empirically checked for the possible existence of multicollinearity problem, and found that the correlation between earnings margin and rate of return, and both asset size and number of shareholders were all statistically significant. This detection of the multicollinearity problem suggests that the results of the

regression model employed by Singhvi and Desai (1971) must be interpreted with care, as it would be difficult to establish separately the influence of each of the explanatory variables on disclosure.

Except for Amernic and Maiocco (1981), Wallace (1987) and Cooke (1989a), all other writers constructed disclosure index with information items considered to be important to or desirable by an identifiable user group, namely financial analysts. For instance, Wallace (1987) developed a wide-ranging list of information items not intended for any particular user group. This resulted in a total of 102 items which were later extended to 185 by disaggregating a few of the 102 items. He elicited the opinions of six user groups in Nigeria on the importance of these items. While Wallace's (1987) approach is appealing as corporate annual reports are aimed at several user groups, it is likely to give rise to the problem of information over-load to the questionnaire respondents due to the number of items involved.[3] This, in turn, can affect their judgement. There is evidence that the users of corporate annual reports, particularly those in emerging economies, are generally uninformed and unsophisticated in financial and accounting matters, and that their capacity to interpret and use accounting information is limited (see, for example, Jagetia and Nwadike, 1983). Also, the concept of capturing the information needs of different users in corporate annual reports has been questioned in the literature (see, for example, Lee, 1971). Different users or user groups have differing and varying levels of information need. The type and amount of information that may be useful to one user, or group of users may not be useful to others. Arrow's (1983) study on collective decision making postulates that ideal outcomes could never be a direct aggregation of constituent preferences. Although the user decision-oriented approach to the construction

[3] The literature on psychology contains many examples of negative effects of information over-load. For the details of some of these studies, see Slovic and Lichtenstein (1971) and Libby and Lewis (1982).

of disclosure index is appealing, it is not without limitations. Thus, when an optimal reporting method is agreed for each user group, a problem arises as to whether the various methods be combined into one general-purpose report or whether social welfare is best served if a special-purpose report is provided to each group. The preparation of special-purpose report is also not cost-effective in terms of time, money, and efforts.

In general, the results of disclosure studies have been ambiguous and inconsistent, especially, among those conducted on developed economies, but not between developed and emerging economies. Nor among those conducted on emerging economies. Wallace and Naser (1995, p. 316) attribute the inconsistencies in the results of disclosure studies to the lack of uniformity in the statistical design normally employed, and the differing nature of the explanatory variables examined in these studies. The inconsistencies could also be due to the differing socio-economic environments of the countries investigated. Although they may be classified either as developed or emerging, each of these countries is unique in its right. The overall disclosure levels of companies in developed economies have empirically been found to be higher than those in emerging economies (see, for example, Singhvi, 1967). However, wide variations have been found in the overall disclosure practices among the countries within the developed world (see, for example, Buzby, 1974b; Barrett, 1976, 1977; Kahl and Belkaoui, 1981; Frost and Pownall, 1994). The reporting practices of companies in the US and in the UK have been reported to be superior and more comprehensive relative to those of their counterparts in Europe (see, for example, Barrett, 1977; Meek and Gray, 1989). But the disclosure practices of US companies are superior to their UK counterparts (for example, Frost and Pownall, 1994).[4] Indeed, the results reported by Firth (1979a) suggest that, in general, the levels of disclosure in the UK are very low. The disclosure practices of companies in emerging

[4] Barrett (1975, 1977) reported a contrary empirical evidence.

economies are generally inadequate relative to those in developed economies (Singhvi, 1968; Chow and Wong-Boren, 1987; Wallace, 1988; Tai et al.; 1990; Ahmed and Nicholls, 1994).

While the overall results of disclosure studies are inconclusive, an aspect of their findings is unequivocal and consistent, particularly, with regard to the relationships between some corporate attributes and level of disclosure. For instance, all the studies cited above except Malone, Fries and Jones (1993), which is industry-specific, have shown empirically that there is a positive relationship between the quality of a company's financial disclosure practices and its size.

Furthermore, positive relationship has been found to exist between the quality of disclosure and listing status in several prior studies (Cerf, 1961; Singhvi and Desai, 1971; Firth, 1979b; Cooke, 1989a, 1989b, 1991, 1992; Malone, Fries and Jones, 1993; Frost and Pownall, 1994; Wallace, Naser and Mora, 1994; Hossain, Tan and Adams, 1994; Hossain, Perera and Rahman, 1995; Patton and Zelenka, 1997). Buzby (1975, p. 28), however, reported a contrary evidence. The findings of these studies should, however, be interpreted with care because of a significant limitation. They did not distinguish between cross-border listed companies (that is, between those that were listed only on two equity stock markets and more than two equity stock markets including domestic markets in both cases). Thus, dual- and multiple-listed companies have conceptually been defined, and empirically treated as if they are the same or identical (see, for example, Cooke, 1991, p. 177; Hossain, Perera and Rahman, 1995, p. 78). Earlier, Cooke (1989b) recognises this deficiency but did not allow for it in his study. Viewed from the perspective of the present investigator as detailed above, dual-listed companies are not necessarily the same as multiple-listed companies. However, it is not intended to rule out the possibility of some similarities existing between them. The point of the argument is that it is possible for

some multiple-listed companies to disclose much more information in their annual reports than dual-listed companies. The same argument can equally be applied to dual-listed and domestically-listed (or singly-listed) companies. Put differently, there is the probability that some multiple-listed companies would inadvertently internalise some aspects, if not all, of the disclosure requirements of foreign stock markets on which they are listed. Consequently, their disclosure practices are more likely to far exceed the levels of both dual-and domestically-listed companies. This may be due to the impact of the disclosure and reporting requirements of some foreign equity stock markets on which they are listed. It is believed that the combined effect of the disclosure and reporting requirements of two or more foreign equity stock markets on the quality of disclosure may far exceed those of a home, and a foreign equity market combined (a typical example of dual listing). Of course, this will depend on the particular foreign equity stock markets on which the companies are listed.

Indeed, Meek and Gray (1989) recognised the possibility of a multiple-listed company having a high quality disclosure in its annual reports than a dual-listed company, and the potential effect it could have on their findings when they investigated the extent to which the disclosure requirements of the London Stock Exchange (LSE) for foreign listed companies are complied with or exceeded by European companies seeking funds on that market. In an attempt to address this problem, they reviewed the disclosure requirements of the other stock exchanges[5] on which their sampled companies were listed. They concluded that "with the exception of the US, none of the world's stock exchanges involved add in any substance to the disclosure requirements faced by our sample of

[5] These stock markets are domiciled in France, Germany, The Netherlands, and Sweden (Meek and Gray, 1989, p. 316).

companies"[6] (Meek and Gray, 1989, p. 319). Implicitly, a company domiciled in Zimbabwe, and listed both on the domestic market and the LSE will have a lower level of disclosure in its annual report than one listed locally, but also on the LSE as well as on the New York Stock Exchange (NYSE).

Frost and Pownall (1994, p. 80) reported that 60 of the 291 companies listed in both the US and the UK stock markets in 1989 were non-US, non-UK companies.[7] Given this fact, and the conclusion in Meek and Gray (1989), one can reasonably argue that the 60 non-US, non-UK companies will undoubtedly disclose much more information in their annual reports than their counterparts listed either only on the domestic market or on both the domestic market and the LSE. Different regulatory environments have different impact on the reporting practices of listed companies (Meek and Gray, 1989). It is therefore, essential, that such distinction is drawn in any empirical study investigating such relationship as the magnitude of such an impact will be of much interest. Regrettably, this study did not investigate this relationship due to lack of data.

Of the disclosure studies cited above, only Singhvi (1967, 1968); Singhvi and Desai (1971), and Firth (1984)[8] examined the influence of corporate disclosure on security price. For instance, Singhvi and Desai (1971) argued that adequate disclosure of information minimise ignorance on the stock market, and as a consequence, the variations

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[6] This conclusion of Meek and Gray (1989) is not surprising; considering the fact that Solnik (1973) had long found continental European capital markets (including all of Meek and Gray's sampled markets) less informationally efficient than those of the UK and the US. He cited loose disclosure requirements, among other factors, to have accounted for the inefficiencies of these markets, namely France, Germany, Italy, The Netherlands, Belgium, Switzerland, and Sweden (Solink, 1973, p. 1152; see also Gray, Meek and Roberts, 1995, p. 61, endnote 4).

[7] These 60 non-US, non-UK companies are multi-listed companies as they might also be listed on their respective domestic markets. In other words, they are listed on more than two stock markets.

[8] And perhaps, the studies conducted by Kochanek (1974) and Simonds and Collins (1978). They focussed only on segmental disclosure. Their findings were, however, similar to those of Singhvi (1967, 1968) and Singhvi and Desai (1971). In contrast, Horwitz and Kolodny (1977) reported a contrary empirical evidence on segmental disclosure and security prices. For a more rigorous statistical analysis on line of business disclosure and market risk adjustments, see Collins and Simonds (1979).

in the market prices of securities will narrow down. Using American data, Singhvi and Desai (1971) reported a positive empirical evidence of the hypothesised disclosure-risk relationship. They concluded that ". . . superior quality of disclosure is related on an average with lower price fluctuations" (Singhvi and Desai, 1971, p. 137). They explained that a higher quality of disclosure provides a lesser scope for excessive market speculation, and therefore narrows the related price fluctuations. Using British data, Firth (1984), however, found no empirical association between the level of voluntary disclosure, and both systematic and unsystematic risks.

In a review article, Garsombke (1979) identified three significant weaknesses in Singhvi's (1967) and Singhvi and Desai's (1971) studies. First, he argued that there is a lack of a logical theoretical base for the hypothesised disclosure-risk relationship. Second, he noted the simplicity of the stock price dispersion measure of risk used in those studies.

Third, he noted that Singhvi's (1967) and Singhvi and Desai's (1971) did not control for other variables likely to influence the disclosure-risk relationship. Garsombke (1979) pointed out that although company size has been found in several empirical studies to correlate significantly with disclosure, it has also been shown in some other studies to associate highly with risk (see Garsombke, 1979, p. 57 for the literature). On the basis of this idea, he argued that if a relationship is found to exist between disclosure and risk, then it might have been induced by company size rather than disclosure. He tested for the possibility of induced effect of company size on risk by replicating and extending the research design of Singhvi (1967). The results of a multivariate regression performed by Garsombke suggest that disclosure is least effective in explaining the variability in price volatility. He observed, however, that company size was a significant explanatory factor, and that whenever it is controlled for, the relationship between disclosure and risk shown by Singhvi (1967) and Singhvi and Desai (1971) ceases to exist. Garsombke (1979, p. 65)

then concluded that "the weight of the evidence presented . . . suggests that disclosure and risk are not casually related and that disclosure is an insignificant variable in explaining differences in . . . risk."

Other studies have also empirically investigated the level of companies' disclosure practices cross-nationally (Choi, 1973a; Barrett, 1976; 1977; Spero, 1979; Kahl and Belkaoui, 1981; Lundbald, 1986; Meek and Gray, 1989; Frost and Pownall, 1994). Their findings indicate that the overall levels of disclosure of US and UK companies are more comprehensive than their other sampled companies domiciled in the continental European countries, Australia, New Zealand, and emerging economies. As indicated earlier, US companies disclose more information than their counterparts in UK (Barrett, 1976; Frost and Pownall, 1994[9]). The findings of these cross-national studies on disclosure, give much credence to the general belief that the quality of financial reporting practice is related to the degree of efficiency of national equity markets.

Studies conducted by Kahl and Belkaoui (1981), Craswell and Taylor (1992), and Malone, Fries and Jones (1993) are industry-specific. Kahl and Belkaoui (1981) focused on disclosure and reporting practices of banks in international setting, while Craswell and Taylor (1992), and Malone, Fries and Jones (1993) studied the disclosure practices of companies in the oil and gas industry in Australia and the US respectively. Using a stepwise regression analysis, Malone, Fries and Jones, for instance, investigated the influence of 20 explanatory variables on financial disclosure. They found only three of the variables, namely, the number of shareholders, listing status, and debt-to-total-equity ratio to be statistically significant in explaining the extent of disclosure practices of the sampled

[9] Frost and Pownall (1994, p. 76) did also find substantial non-compliance in the UK and the US (but less in the US) with annual and interim reporting rules and with rules requiring foreign companies to disclose in the US and the UK information that have been made public in their respective home countries (that is, cross-jurisdictional disclosure rules).

companies. Malone, Fries and Jones (1993) concluded that companies systematically provide different amounts of information.

Stanga (1976), Cooke (1989a, 1989c, 1992) and Tai et al. (1990), however, took a somewhat different step by examining, rather, the influence of industry-type on disclosure. The findings of these studies indicate that disclosure practices of some industries are significantly higher than others, though, the results in general are mixed. Categorising the companies in his sample into trading; conglomerate; manufacturing; and services, Cooke (1989a) found that companies in the trading industry disclose less voluntary information than the other industries. Again in another study, Cooke (1992) found that manufacturing companies disclose significantly more information than non-manufacturing companies, and this was true regardless of their listing status. He also observed significant differences in the levels of their mandatory disclosure practices. Using a Friedman two-way analysis of variance by ranks test, Tai et al. (1990), however, found no significant difference between business sector and non-compliance of disclosure regulations in Hong Kong at both 90 and 95 per cent confidence intervals. Patton and Zelenka (1997) also found no difference in the extent of disclosure of companies in the financial or manufacturing sectors and other companies in their sample.

As noted earlier, almost all the cited studies have reported a positive association between the extent of disclosure and company size. The implication of these results is that efforts to improve disclosure should be concentrated on relatively smaller companies. Perhaps, this motivated Buzby (1974b) to empirically investigate the disclosure practices of small-and medium-sized US companies. To summarise the extent of disclosure in the annual reports of his sampled companies, Buzby calculated for each item a weighted mean for the percentages of the average of financial analysts' weights. The weights were the number of companies required to disclose a given item of information. The overall mean

extent of disclosure was 51.2 per cent; indicating that there was an extensive opportunity to expand the extent of disclosure in the annual reports of small and medium size companies. He observed also that many of the companies in his sample reported a limited amount of information, and that those information items that are of greater importance to financial analysts were inadequately disclosed.

Finally, another group of writers[10] (for example, Bastable, 1977; Benston, 1984; McKinnon, 1984; Chow, 1984; Easterbrook and Fischel, 1984; Meier-Schatz, 1986a, 1986b; Elliott and Jacobson, 1994) focused their research efforts on the cost-benefit analysis aspects of financial disclosure rules with regard to individual companies, and to the society at large. Using a questionnaire design, Bastable (1977), for instance, investigated the costs, to US companies, of disclosing replacement cost data. He concluded that "society paid a multi million dollar-figure for the rule requiring replacement cost data." In another study, McKinnon (1984) addresses empirically the cost-benefit issue of 20 disclosure items required of multinational corporations (MNCs). She performed multiple discriminant analysis on data from both users of information (represented by US financial analysts), and providers of information (represented by US corporate controllers). The hypothesis that there are no significant differences in perceptions of cost and value of information between the two groups was rejected. While the controllers perceive costs of producing these information items to be higher than the costs of producing other items, analysts perceive values of these information items to be higher than the values of other information items. Others (for example, Meier-Schatz, 1986a; 1986b) have also provided evidence, though analytical, in favour of financial

[10] Maijoor (1994) has classified these writers into three: (a) those that have tried to establish perceptions of costs and benefits of accounting regulations; (b) those that have measured the actual costs of accounting regulation for companies; and (c) those reporting an overview of the various categories of costs and benefits and the available empirical evidence of these. For detailed discussion on the problems and limitations of the cost-benefit technique used in these studies, see the above reference.

disclosure rules. In general, the results of these studies have not been conclusive due to measurement problems of the variables involved. This suggests the need for further studies. This study, however, did not focus on this line of research.

Of all the empirical studies in accounting on emerging economies, except for South Africa and Nigeria, little is known about other anglophone African countries. Specifically, the available information on the "adequacy" of the amount of mandated information disclosed by public companies listed on equity stock markets in anglophone African countries, and the "stringency" of the disclosure regulatory enforcement styles employed by these stock markets is very scanty. This study is, therefore, an attempt to address this problem. In short, it seeks to extend the research paradigm employed in Cerf (1961) to the ZSE; by evaluating the financial reporting and disclosure practices of the listed companies, and by assessing the strictness in enforcing disclosure requirements on these companies by the stock exchange as of 1994.

Although this study is closely related to the reviewed disclosure studies, it is, however, unique in two respects. First, it analyses the concept of disclosure in relation to securities regulation. Disclosure is a regulatory tool (Mundheim, 1964). The study is based on the belief that it is appropriate, and necessary to regulate trading in corporate securities through mandatory disclosure system especially in emerging economies. This is because the disciplinary mechanisms of the free market system that ensure voluntary disclosure of company-specific information as in developed economies are either immature or non-existent in these emerging economies. For equity stock markets to price and allocate resources efficiently in emerging economies, the disclosure of company-specific information needs to be regulated. Regulation through disclosure is crucial for efficient securities market if it is to ensure economic development and growth in emerging economies (see, for example, Gill and Tropper, 1988). The invisible hands of the free

market system may not guarantee adequate supply of information for optimal investment decision making in these economies. The second unique characteristic of this study is that it is a pioneering empirical study of the "stringency" of disclosure regulatory regime (of the ZSE) which employed the co-operative model of regulatory enforcement (to be explained in Chapter V) during the period under investigation.[11] The observance of disclosure requirements of any stock market by its listed companies depends much on the effectiveness of the market's monitoring and enforcement mechanisms.

The Scope of the Study

Primarily, this study empirically investigates the "adequacy" of mandatory information disclosure practices of the ZSE listed companies and the "stringency" of the disclosure requirements of that market. It is, however, limited to information required to be disclosed in audited annual reports and accounts of listed profit-seeking companies. It did not consider the disclosure practices of regulated companies such as those in banking, insurance, real estate industries, and public utilities as they are exempted from certain accounting requirements of the Zimbabwean Companies Act. Neither did it examine corporate information required to be disclosed in interim report, prospectus and other listing statements, and public announcements such as conference calls (to analysts). This is because some of the information released through such media are not both tractable and reliable. The emphasis on disclosure in corporate annual reports is of significance in several respects. First, annual reports are considered relatively more reliable source of information about companies. At least the financial statements in corporate annual reports are audited by independent external audit firms.

[11] For analytical assessment on "stringency" of disclosure regulatory regime, see Pillai (1986) and Meier-Schatz (1986b), and Kirsch (1994).

Second, viewed from the perspective of researchers, annual reports are a relatively cheaper source of information on companies. Except for the costs of postage stamps and envelopes, there was virtually no other direct costs to obtain the annual reports of the sampled companies from Zimbabwe.

Third, they are the most widely read, and easily accessible corporate-specific information source (Abdelsalam, 1990). Annual reports provide a fairly comprehensive financial and non-financial information on public companies. Finally, annual reports are an important medium by which companies communicate with diverse set of accounting information users (Parker, 1982). However, in spite of its frequent use in research, the annual report is not without a limitation. Thus, most of the information presented in it about an entity's financial position and results of operation are historical. The annual report, however, plays a confirmatory role but its users require information that is more useful for predicting future cash flows from operations.

Furthermore, this study investigated neither the accounting recording systems nor the measurement aspects of financial accounting standards. It did not focus on the adequacy of other areas of accounting such as cost and managerial accounting, and accounting information systems. No attempt was made to assess the accounting principles employed, and the estimates made by the management of the companies in the sample in preparation of the financial statements as they are outside the scope of this study.

Also, the investigation of voluntary disclosure in corporate annual reports is outside the scope of the study. The emphasis on mandatory disclosure is justified by the fact that most of the previous studies are, in general, about the financial disclosure and reporting systems and practices of companies listed in developed securities markets. Arguably, these markets are more informationally efficient than emerging stock markets, and are supported by effective and efficient monitoring and enforcement systems (see

Solnik, 1973; Cooper, 1982). In these economies, as was argued by Abayo and Roberts (1993), it can generally be assumed that companies comply with all (or almost all) of the legally and institutionally required disclosures insofar as they are applicable to them. Perhaps, this explains why most of the studies on these countries focussed on voluntary rather than mandatory disclosure (see Part I of Appendix A).[12] While empirical evidence is limited, it appears that in many emerging economies such a generalised assumption can not be made.[13] This may be explained by the fact that there is generally a weak capital market system (or none at all) in these economies. Ahmed and Nicholls (1994) suggest other factors, including "inadequate regulatory framework and enforcement mechanisms and the lack of an accounting profession." Therefore, it stands to reason that, any attempt to investigate the information disclosure practices of companies listed on an emerging stock market should first focus on the "adequacy" of information disclosed by these companies, and the "stringency" of the existing mandatory disclosure regulatory regime.

Summary

This chapter has presented the aims of this study and has defined its underlying problem as well as the research questions investigated. It has established the need for an empirical accounting research to confirm or otherwise of the general assumption that emerging equity stock markets are informationally inefficient due to inadequate corporate information and less stringent mandatory disclosure regulatory regime. It has also reviewed the relevant literature on disclosure, and has set the boundaries within which the present study was conducted.

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[12] Other possible reasons for voluntary disclosure have been suggested in the literature (see, for example, Choi, 1973a, 1973b; Ronen and Livnat, 1981; Kelly, 1983; Watts and Zimmerman, 1986; Wong, 1988; Meek and Gray, 1989; Skinner, 1994).

[13] The results of disclosure studies on some of these economies: Wallace (1987) in Nigeria; Tai et al. (1990) in Hong Kong; Priebjrivat (1991) in Thailand; and Ahmed and Nicholls (1994) in Bangladesh indicate that the overall disclosure practices of the sampled companies were far below mandatory disclosure minima.

CHAPTER II

THE MICROSTRUCTURE OF THE ZIMBABWE STOCK EXCHANGE

> Every society keeps the records most relevant for its major values.
> (Lazarsfeld, 1959, quoted in Devine, 1985, p. 57)

This chapter examines the key institutional characteristics of the ZSE (hereafter called the Exchange). Specifically, it describes and analyses the historical development of the Exchange, its organisation, structure, market trading mechanisms, and its regulatory requirements. It also assesses the performance of the Exchange and the relationship between its development and that of the general financial system in Zimbabwe. The microstructural features of the Exchange are examined and analysed here because characteristics of a stock market affect the costs of trading on it, the speed at which information is compounded in prices, and the accuracy with which prices reflect publicly available information (Elton and Gruber, 1995).

The Historical Development of the Stock Exchange

The first stock exchange in Zimbabwe (formerly Rhodesia) was established in Bulawayo in 1896. It was, however, operational for about six years from 1896 to the end of the South Africa war. Two other stock exchanges were also established in Gwelo and Umtali. The former is now only remembered by the name of the building that housed it. The latter also founded in 1896, thrived on the success of the local mining industry. The boom in the mining industry was short-lived, and as consequence, the stock exchange that depended so much on it collapsed in 1924.

A new stock exchange was established in Bulawayo after the second world war.[1] Dealings in securities started on this market in January 1946. A second floor was opened in Salisbury (now Harare) in December 1951. Trading on these two centres was conducted by telephone, and continued in operation until it became necessary that a legislation should be enacted to govern the rights and obligations of both its members and the general investing public.

The Rhodesia Stock Exchange Act, as it was originally called, took some five years from the first draft until it reached the statute book in January 1974. Although the members of the stock exchange continued to trade as before until it became necessary, following Zimbabwe's unilateral independence, to bring into being a new exchange to coincide with the passing of the legislation. The present Exchange, therefore, dates from the passing of that Act.

The principal objective of establishing the stock exchange was to operate an organised securities market in Zimbabwe for both new securities (primary market), and existing securities (secondary market). It also has the responsibilities to maintain fair and efficient dealing in securities for the protection of investors, and to regulate the affairs of members.

Organisation of the Stock Exchange

The organisational structure of the Exchange is illustrated in Figure 2.1. Like all equity stock markets, the ZSE has specific administrative structures, prescribed rules and procedures, definite body of membership, and facilities for providing various related functions to its participants. The Zimbabwe Stock Exchange Act (No. 27) of 1973 provides the legal basis for the establishment of the Exchange. The Exchange operates

[1] According to Wai and Patrick (1973, p. 312, table 10), the Rhodesian Stock Exchange was rather established in the year of the second world war with 25 member firms, and 218 listed companies.

in terms of and under the authority of this Act. It is a statutory corporate body which is capable of suing and being sued in its own right. It has the right to own assets and owe debts. The Exchange generates its own income through a variety of sources including listing and membership fees, annual sustaining and review fees, and from the sale of information services. Its affairs are managed and controlled by the Committee of the Exchange. The Committee is the executive authority that prescribes the rules and regulations of the Exchange. It is the responsibility of the Committee to ensure that public interest is always protected in the dealings of the members of the Exchange. It is the policy-making body of the Exchange. The Committee is responsible to the Minister of Finance through a Registrar. It is made up of elected members from the stockbroking firms of the Exchange whose number should not be less than five or more than seven, the Registrar, and two government officials. The government officials are appointed by the Minister of Finance.

The day-to-day running of the Exchange is the responsibility of the Chief Executive. The Chief Executive oversees the activities of the stockbroking firms. He conducts initial vetting of new applicants (both persons wanting to be stockbrokers and companies to list securities) for membership, and investigation of suspected abuse of the Exchange's rules. He monitors members' compliance with the rules and regulations of the Exchange. He is responsible to the Committee of the Exchange, and serves as a Secretary at the Committee's meetings.

The Listing Committee has a delegated authority from the Committee of the Exchange in discharging its duties. It assesses the suitability of new applicants to the Official List of the Exchange. It recommends for listing, suspension or delisting of securities to the Committee of the Exchange. For instance, under Provision 8.11 of the ZSE Members' Rules, trading in the equity shares of Zimbabwe Engineering Company (ZECO) was suspended on 15 August 1995 by the Exchange. The company was placed

under provisional liquidation by its major creditor, Stanbic Bank of Zimbabwe Limited, which was being owed Z$10 million by the ZECO.

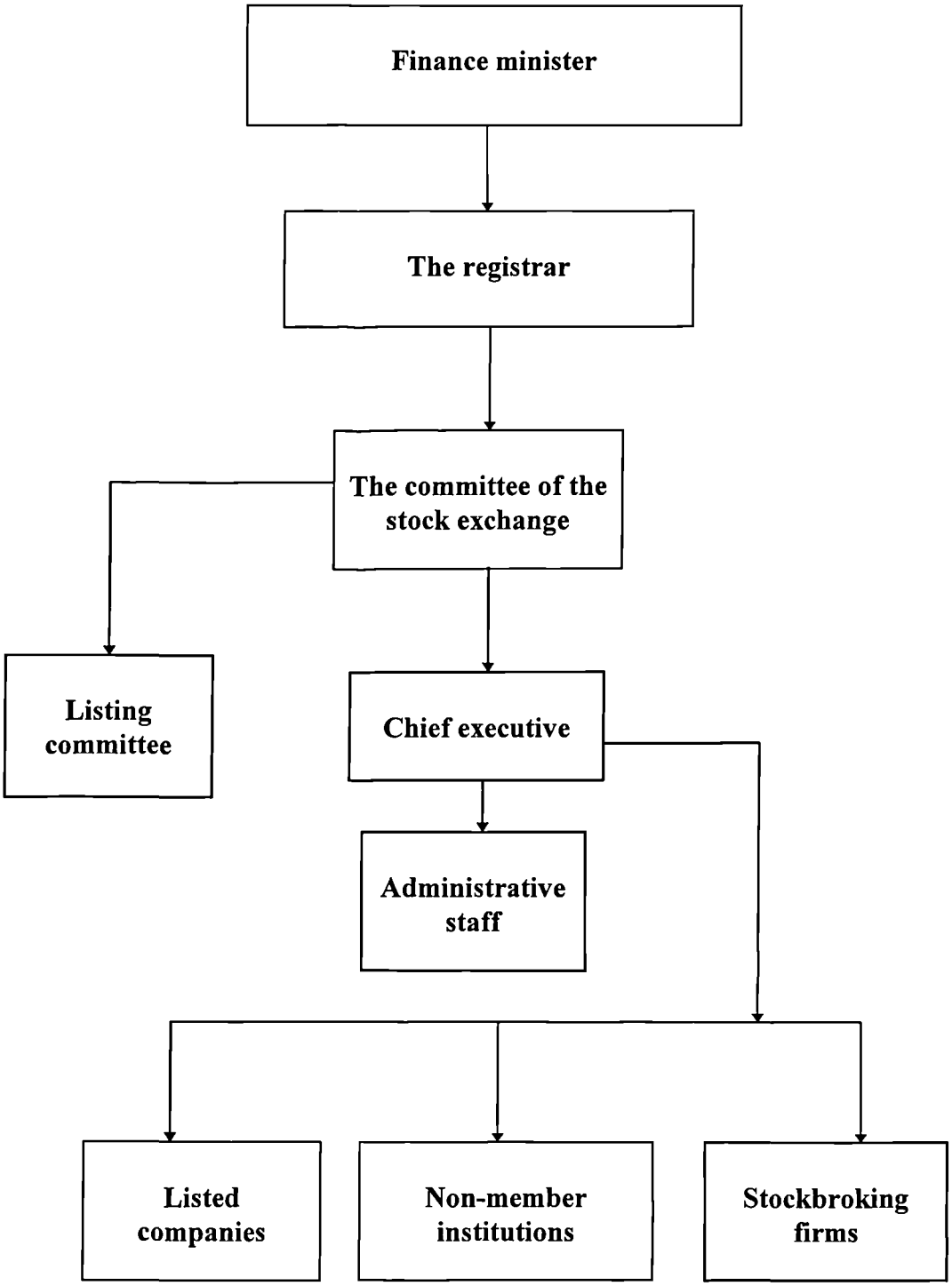

Figure 2.1 The organisational structure of the Zimbabwe Stock Exchange

The Exchange has no specialised market makers (dealers, specialists or jobbers) whose function is to buy and sell stocks for their portfolio to provide liquidity at all times and smooth out price movements. The brokerage firms are, however, allowed to invest for their own account. Currently, there are nine stockbroking firms operating on the market. The stockbrokers are members of the Exchange, and act as financial advisors to their clients and carry out their orders as agents. Most of the stockbroking firms are associates of some international stockbroking firms. For instance, Edwards & Company (Pvt.) Limited is an associate of Robert Fleming Group of New York. There are also non-member institutions affiliated to the Exchange. As of September 1994, such associate members numbered 14.

The Stock Market's Trading Mechanisms

Trading, Settlement and Delivery Systems

Trading in securities on the Exchange takes place on a "call-over" system. This system is widely used in many stock exchanges in emerging economies for several reasons. First, it is simple and easy to operate. Second, it is cost-effective considering the relatively small volume of transactions on these markets. Finally, the telecommunication systems in most of these economies are not well developed to accommodate an on-line computer-based trading system. Trading sessions are normally held twice a day, Monday to Friday, except where any of these days is a public holiday. The first call-over session begins at 9:00 a.m. and the second at 11:45 a.m. Elton and Gruber (1995) describe a market where trading takes place at specified time intervals as a *call market* as opposed to a *continuous market*. A continuous market is one where trading takes place at any time during the trading day as long as a counterpart offer exists at a suitable price. The trading system of NYSE is a typical example of a continuous market. At the Exchange, the first call-over session determines the opening

prices of the listed securities, while the second session determines the closing prices. During call-over sessions, an official of the Exchange invites bids and offers from the members of the Exchange by calling out, on a screen, the names of individual securities one after the other in an alphabetical order. Trading on the Exchange is usually carried out in round lots. A round lot for equity stock is 100 shares. An odd lot is a quantity different from 100 shares such as 53 shares. Orders (both bid and offer orders) can, however, be both round and odd lots.

All transactions on the Exchange are settled in cash, but in two ways depending on whether the bidder is a local or a foreign investor. For most local investors, payment for shares is due within 7 days from the day the trade was initiated. van Agtmael (1984) describes such system of settlement and delivery as a *Ready basis*. The settlement system is, however, different in the case of trades transacted by or on behalf of certain local institutional investors. Such institutional investors are permitted to settle transactions upon the physical delivery of scrip in negotiable order which can take up to 30 days from the day the trade was initiated. This is described by van Agtmael as a *Settlement basis*. Foreign investors usually operate on a 7-day settlement arrangement as follows (Remo Investment Brokers, 1994):

Day T: The day the trade is initiated on the Exchange. A copy of the deal note is forwarded to the foreign investor. The stamped deal note is, however, sent to the local custodian of the foreign investor.

Day T + 1: The foreign client instructs the local custodian to settle at Day T + 7.

Day T + 4/5: The foreign client arranges to buy Zimbabwe dollars at least two business days before settlement. The client deposits the foreign

currency equivalent in the custodian's account in, say, London, or any other specified account. Foreign investors are required by statute to settle any purchase of shares in Zimbabwe with foreign money brought into the country. The local custodian credits cash account in Zimbabwe dollars with the proceeds.

Day T + 7: The local custodian pays stockbroker against delivery of scrip in a negotiable form.

Brokerage Commissions and other Transaction Costs

A number of costs are associated with trading of securities on the Exchange. The obvious costs are commissions charged on each trade. Share brokerage commissions are fixed rather than negotiated. The percentage of the commission depends on the type of transaction, and size of the consideration money. The following brokerage fees presented in Table 2.1 apply to both buyers and sellers of ordinary and preference shares on the Exchange.

Table 2.1

Schedule of minimum brokerage commissions on the Zimbabwe Stock Exchange

Scale	Consideration Z$	Rate of charge %
On the first	50,000.00	2.0
On the next	50,000.00	1.5
Over	100,000.00	1.0

However, the issue of debentures and loan stocks, be it secured, unsecured or convertible attracts a fee of 3/4 per cent of the consideration money. All commission is subject to a minimum charge of Z$15.00 or at the discretion of the stockbroker if the consideration money is less than Z$100.00. However, the minimum charge on any

option is Z$15.00. In addition to the commissions, there are other direct costs associated with investing in Zimbabwe. However, these costs tend to be small relative to the commissions. For example, there is also a basic charge of Z$20.00 per transaction. Moreover, registered stockbrokers are permitted by law to levy a registration, and safe custody charges in respect of shares registered and scrip held on behalf of a client of an amount of Z$20 per transaction and Z$50.00 per annum or part thereof.

The Structure of the Stock Exchange

Market Size

As of September 1996, 65 companies were listed on the Exchange with total market capitalisation of Z$49,919 billion (US$4,827 billion). The top 10 companies in terms of market capitalisation account for more than 75 per cent of the total market capitalisation; with Ashanti Goldfields Company Limited[2] (AGC) being the largest listed company worth more than Z$16, 803 billion as of 30 September 1996.

Following Pagano (1993), He and Pardy (1993), Demirgüç-Kunt and Maksimovic (1995) and Levine and Zervos (1996), the size of the Exchange is measured by the ratio of market capitalisation to Gross Domestic Product (GDP). The ratio of market capitalisation to GDP is a measure of a stock market's ability both to allocate capital and to provide significant opportunities for risk diversification for investors (Demirgüç-Kunt and Maksimovic, 1995; Levine and Zervos, 1996). Column 8 of Table 2.2 contains this ratio which ranges from 4.09 per cent in 1984 to 77.95 per cent in 1996 with the mean percentage of 24.12 for the 17 year period.

[2] Ashanti, as it is known internationally, is a Ghanaian mining company headquatered at Obuasi (in the Ashanti Region), which is about 45 kilometres away from the birth place of the present investigator. AGC is also listed on Ghana, London, New York, Australian and Toronto Stock Exchanges.

Table 2.2

Size, development and monetisation of the Zimbabwe Stock Exchange

[1] Year (End of period)	[2] No. of listed companies	[3] Total market capitalisation (Z$ m)	[4] Broad money supply[a] (Z$ m)†	[5] GDP (Z$ m at market value)†	[6] Turnover (value) (Z$ m)†	[7] Ratio of money supply to GDP (%)	[8] Ratio of market capitalisation to GDP (%)	[9] Turnover ratio[b] %	[10] Ratio of turnover to GDP (%)
1980	74	1,106	952	3,441	316	27.67	32.14	28.57	9.18
1981	67	507	1,035	4,433	300	23.35	11.44	59.17	6.77
1982	68	316	1,238	5,197	197	23.82	6.08	62.34	3.79
1983	65	300	1,270	6,306	224	20.14	4.76	74.67	3.55
1984	57	262	1,553	6,404	62	24.25	4.09	23.66	0.97
1985	56	588	1,619	7,297	48	22.19	8.06	8.16	0.66
1986	55	687	1,838	8,289	68	22.17	8.29	9.90	0.82
1987	54	1,193	2,064	8,939	129	23.08	13.35	10.81	1.44
1988	54	1,499	2,562	11,441	205	22.39	13.10	13.68	1.79
1989	55	2,395	3,140	13,845	217	22.68	17.30	9.06	1.57
1990	57	7,075	4,865	16,655	470	29.21	42.48	6.64	2.82
1991	60	7,101	5,858	22,443	375	26.10	31.64	5.28	1.67
1992	62	3,433	7,201	28,240	204	25.50	47.67	5.94	0.72
1993	65	9,927	10,296	36,428	3,042	28.26	27.25	30.64	8.35
1994	64	14,087	13,828	47,426	3,880	29.16	29.70	27.54	8.18
1995	65	19,598	16,965	56,484	2,110	30.03	34.70	10.77	3.73
1996	65	52,619	21,915	67,500 (Estimate)	10,661	32.47	77.95	20.26	15.79

[a] Broad money is defined as notes and coins in circulation plus demand deposits, savings deposits and quasi-money (under-and-over 30-day fixed deposits with the banking sector.
[b] Turnover ratio = Value of equities traded ÷ market capitalisation.
† Source: Reserve Bank of Zimbabwe (1996)

Again, following Levine and Zervos (1996), the liquidity of the ZSE is captured by two ratios (reported in Columns 9 and 10 of Table 2.2). The first is the ratio of trading value to total market capitalisation. This ratio, frequently called the turnover ratio, measures the value of equity transactions relative to the size of the stock market (Levine and Zervos, 1996). The second liquidity measure is the ratio of total value traded to GDP. This also measures the value of equity transactions relative to the size of the Zimbabwean economy. The turnover ratio complements the measure of stock market size. To the extent that a large stock market may be inactive. Similarly, the turnover ratio complements the second liquidity measure -the ratio of total value traded to GDP- as a market may be small (compared with the entire economy), but liquid. As Levine and Zervos (1996) point out, the liquidity indicators do not directly measure the ease by which equity shares change hands between sellers and buyers on a stock market. They (liquidity ratios), however, measure the degree of a market's trading activities relative to its size and that of the economy in general. Usually, more developed stock markets experience greater exchange activities, and as such any stock market with higher turnover ratio is deemed to be relatively developed. Taken together, the statistics in Columns 9 and 10 of Table 2.2 suggest that the Exchange is both inactive and insignificant in the Zimbabwean economy.

Column 7 of Table 2.2 also reports the trend and the degree of monetization and development of the Zimbabwean economy over the 17 year period to 1996. The ratio of broad money supply to GDP indicates the level of monetisation of Zimbabwe (that is, the depth of the financial system in the country [Levine and Zervos, 1996]). It ranges from 20.14 per cent in 1983 to 32.47 per cent in 1996; with the average over the 17-year period being 25.44 per cent. A hypothesis that there is no relationship between the development of financial system and that of a stock exchange was rejected. Thus, a Pearson product-moment correlation test on the ratio of broad money supply to GDP

(Column 7) and the ratio of market capitalisation to GDP (Column 8) yielded a positive coefficient of 0.8430 which is significant at the 1 per cent level. Consistent with the results of He and Pardy (1993), this finding suggests that the degree of financial depth is not a constraint to stock market development. He and Pardy, using a cross-sectional data from 32 developing countries for 1984-90, reported a similar positive relationship between the degrees of financial depth and stock market development in an economy.

The Exchange is dominated by institutional investors such as insurance companies, and provident funds. There is also a widespread use of locally registered nominee companies. Institutional investors own about 85 per cent of the total securities listed on the Exchange, while the remaining 15 per cent is held by private investors. While this is so, one would have expected much trading among the institutional investors on the Exchange. In an interview with a senior officer of the Exchange, when the present investigator was on a study visit to the Exchange in May 1996, it became apparent that this is not true of the Exchange. The explanation for this phenomenon is that insurance companies and other financial institutions in the country are legally required to hold 85 per cent of their takings in equities and government bonds at all time. This hinders the institutional investors from trading frequently on the market.

Four main types of securities are listed and traded on the Exchange. The first is domestic equities - ordinary shares issued by Zimbabwe companies. The second category of the listed securities is overseas equities - ordinary shares issued by non-Zimbabwe companies (for example, the shares of Falcon Investment SA of Luxembourg and AGC of Ghana). The third is the stocks issued by the government and municipal councils to raise money to fund public expenditure. The fourth is bonds or fixed interest stocks issued by state-owned enterprises (for example, the stocks of the Zimbabwe Electricity Supply Authority).

Foreign Portfolio Investment

The Exchange was effectively closed to foreign investors because of severe exchange controls which were operating in Zimbabwe until June 1993. After this date, the Government of Zimbabwe through the central bank, the Reserve Bank of Zimbabwe, has been pursuing a policy of gradual, but progressive, exchange control liberalisation as a part of its objective of making the country more attractive to foreign investors. Exchange controls were relaxed in June 1993 as a means of increasing liquidity on the market. This change resulted in a net inflow of Z$1.18 billion from foreign investors (Financial Times, 1996). Now, foreign portfolio investment approval is usually granted, but prior exchange approval is required. Foreign investors are permitted to own up to 40 per cent of the equity of a listed company. However, a single foreign investor is permitted to acquire up to a maximum of 10 per cent of the shares on offer. Any investor wishing to exceed the 10 per cent limit would need the approval of the central bank. Most of the listed mining companies have substantial foreign share holdings, and have multiple listings as well (mostly on Johannesburg and London Stock Exchanges). Capital and dividends can be repatriated. There is a 15 per cent withholding tax on dividends (effective 1 January 1994), and a 10 per cent capital gains tax (effective 1 April 1993). Table 2.3 reports the aggregate volume and value of trading (both bid and offer) in securities by foreign investors since the liberalisation policy of the government, and its relationship with the overall dealings on the Exchange. As at 29 November 1996, foreign investors own about 6 per cent of the total number of outstanding securities listed on the Exchange.

While the opening up of one's market to foreign investors leads to development and growth of the host country's economy through enhanced capital liquidity as it did on the ZSE after the government's liberalisation policies were introduced, certain writers (for example, Gill and Tropper, 1988; Sedaghat, Sagafi-nejad and Wright, 1994)

Table 2.3

Dealings and holdings of foreign investors on the Zimbabwe Stock Exchange (in 67 securities out of 82 on the Official List as of 29 November 1996)

Cumulative dealings in securities				Cumulative holdings in securities		Proportion of total issued outstanding share capital held by foreign investors
Bought		Sold		Net holding (volume)	Outstanding issued shares (volume)	%
Volume	Value (Z$)	Volume	Value (Z$)			
654,668,132	2,194,109,760	278,256,148	1,117,058,704	378,326,342	6,113,324,444	6.19

Source: Compiled from files of the Zimbabwe Stock Exchange.

have advised caution against the idea of joining the international market as it has some drawbacks. For instance, Sedaghat, Sagafi-nejad and Wright (1994) illustrated that domestic interest rates must follow those prevailing in the international market thus undermining a country's financial independence and sovereignty which also makes it difficult to control money supply.

The Performance of the Stock Exchange

The Market Index

In January 1968, the Committee of the Exchange introduced two composite market indexes based on all equity stocks listed on the Official List of the stock exchange. The market indexes reflect the movements in the market prices of the stocks on the market. Market index serves two important roles in an economy. First, it serves as a barometer which provides a comprehensive measure of the performance of the stock market. Second, changes in the market index are important for studying the relationships between prices and other macro-economic variables such as industrial production, changes in money supply, and corporate profits. The indexes introduced were: (1) the industrial index; and (2) the mining index. Of the two, the industrial index is the most popular, and its constituent stocks represent about 89 per cent of the total stocks listed on the market. The remaining 11 per cent of the stocks constitute the mining index.

Method of computation of the indexes

Basically, the indexes measure the changes in the aggregate market value of all stocks listed on the Exchange. The base for each of the indexes is the aggregate market value of its constituent stocks as at the close of business on 31 December 1967 (that is, 1967 = 100). The total aggregate value is calculated by multiplying the proportion of

each constituent stock to the total number of issued shares of all the constituent stocks by its market price (the average of the bid and offer prices), and totalling the products derived therefrom. In computing the indexes, the base year's market value is used as the denominator of a fraction whose numerator represents the current total aggregate market value. The general expression for the indexes is:

$$CurrentIndex(\mathrm{I}) = \frac{CurrentTotalAggregateMarketValue}{BaseYear'sTotalAggregateMarketValue} \tag{2.1}$$

In algebraic symbols, Equation 2.1 is compactly stated as:

$$I_t = \sum_{j=1}^{n_t}\left[\left(W_{tj} \times P_{tj}\right)\right] \div \sum_{j=1}^{n_o}\left[\left(W_{oj} \times P_{oj}\right)\right] \tag{2.2}$$

where,

I_t	=	index at period, *t*;
W_{tj}	=	the weighting factor of *j* constituent stock at period, *t* (that is, the proportion of the number of *j* constituent stock to the total number of all outstanding constituent stocks at period, *t*;
W_{oj}	=	the weighting factor of *j* constituent stock at the base period, *o*; (that is, the proportion of the number of *j* constituent stock to the total number of all issued and outstanding constituent stocks at the base period, *o*; adjusted for right issues, new public offering, new listings, and de-listed stocks);
P_{tj}	=	the average market price of the *j* stock at time, *t*;
P_{oj}	=	the average market price of the *j* stock at the base period, *o*;
n_t	=	the number of constituent stocks issued and outstanding at time, *t*;
n_o	=	the number of constituent stocks issued and outstanding at the base period, *o* ;adjusted for right issues, new public offering, new listings, and de-listed stocks.

Technically, the indexes are value-weighted and arithmetic in form. Three reasons are provided in the finance literature to justify weighted index. First, it ensures that the index reflects the relative importance of each constituent stock in a way suited

to the index. Second, it eliminates the effects of stock split and bonus issues, since the stock value remains constant. Finally and most importantly, it makes the index sensitive only to changes in the market value of the constituent stocks.

Although weighted indexes are criticised as being dominated by large companies, and are liable to be biased upward, it is appropriate for the Exchange as the indexes are to indicate changes in the aggregate market value of all stocks represented by the indexes. As it is an arithmetic average, the base year's market value is adjusted from time to time to reflect only movements in prices resulting from call-over activities and the effects of other factors such as new listings, de-listings, right issues, and new public offering. The effect of the adjustment is that the relationship between the adjusted base value and the current market value after the change is the same as that between the current market value before the change and the base value prior to the change. In this way, the indexes are unaffected by factors other than price changes in the stocks. However, no adjustment is made in the cases of stock-split, bonus issue, stock dividend or decrease in paid-up capital. The reason for not adjusting the indexes in these cases is that such corporate actions do not affect the current market values.

Frequency of computation of the indexes

The indexes are computed daily basis after the second call-over.[3] The movements in the indexes are televised nationally every evening and the next morning. They are also published in some national daily press in the following morning and some weekly financial press; the popular of them is the Financial Gazette (equivalent of the US *Wall Street Journal* and the UK *Financial Times*, except that the Financial Gazette is a weekly newspaper).

[3] Recall that the market is run on two call-over systems from Monday to Friday. The first call-over starts at 9:00 a.m. and the second at 11:45 a.m.

Assessing the Performance of the Market

It is apparent from Table 2.4 that the market was in a turmoil in the first four years after the country has attained independence in 1980. This is evidenced by the downward movements in both indexes. The industrial index fell by an average of 26.62 per cent per year for the first four years following independence. During the same period, the mining index also fell on an average of 36.09 per cent per year. The mining index fell more sharply than the industrial index because most of its constituent stocks were being held by foreign investors who sold their holdings during this period. Indeed, between 1980 and 1984, about 80 per cent of the total turnover of the Exchange was originated from foreigners.

Table 2.4

Performance of the Zimbabwe Stock Exchange indexes[a]
(Base year =1967 = 100)

Period	Industrial Index		Mining Index	
	Absolute (End of period)	Change in index %	Absolute (End of period)	Change in index %
1979	393.67	–	268.65	–
1980	477.77	21.36	207.36	-22.81
1981	227.70	-52.34	53.16	-74.36
1982	136.13	-40.21	44.45	-16.38
1983	123.84	-9.03	34.00	-23.51
1984	122.73	-0.90	23.76	-30.12
1985	251.91	105.25	92.18	288.00
1986	286.30	13.65	116.70	26.60
1987	450.05	57.19	245.10	110.03
1988	552.61	22.79	308.35	25.81
1989	869.13	57.28	327.64	6.26
1990	2,282.76	162.65	413.31	26.15
1991	1,953.61	-14.42	388.28	-6.06
1992	867.43	-55.60	180.34	-53.55
1993	2,325.26	168.06	515.79	186.01
1994	3,160.80	35.93	1,043.06	102.33
1995	3,972.62	25.68	1,329.02	27.41
1996(Sept.)	6,992.15	76.01	1,374.82	3.45

[a] Complied from the files of the ZSE.

Although there was a world-wide recession during this period, the fall in the indexes can be attributed to an endogenous factor. Following independence, there was confusion in the market as to the line of economic policies that the ZANU-PF government will pursue. Although it was apparent that the central objective of the government was to redress the severe socio-economic imbalance between the white and the black populations created by the racist policies of previous Rhodesian governments, the emphasis on socialism led to confusion about the general direction of government policy.

Some of the policies pursued by the government were not conducive for the development and growth of the market. For instance, the government sought to eradicate private ownership means of production through the state-controlled Industrial Development Corporation by acquiring shares in foreign and domestic-owned companies. Dashwood (1996, p. 34) sums it up well, when she describes the policy objectives of the ZANU-PF government on coming to power as "nationalist/social-welfarist."

The market crashed again during 1991-92 financial years. This was partly due to macro-economic factors. In the late 1980s, the Zimbabwe economy was buffeted by such factors as declining terms of trade, rising interest rates, and deficit financing. This led the government to abandon its welfare-oriented policies for de-regulation and free-market reforms. In January 1991, the government introduced the Economic Structural Adjustment Programme in an attempt to revamp the economy. The turnabout in development strategy which emphasises greater reliance on the market system brought untold hardship to many individuals and the corporate sector. During the same period, the country was going through a severe drought which led to an economic recession that resulted in the loss of about 53,000 jobs (more than four per cent of the nation's work force). The agro-based industries listed on the Exchange were badly hit by the drought,

and as a consequence, their performances on the market were adversely affected. According to the 12 December 1994 issue of the Daily Gazette, a local financial newspaper, the IFC described the market in 1992 as "the world's worst performer."

The market was active in the middle of the 1990s. For instance, it witnessed an increased activity in industrial shares in 1996. The industrial index surged to an all-time high of 7177 during September 1996. This phenomenon was due to two indigenous factors. First, there was a drastic fall in the inflation rate from 28 per cent in January 1996 to 17.7 per cent in August 1996. The second factor was a fall in interest rates. This reduced the returns on money market investments, and as a result, investment in equity shares became attractive. For instance, the range of rates quoted against a 90-day treasury bill which stood at 24.8 – 25.5 per cent at the end of June fell to 20.21 – 22.64 per cent in September 1996 (Reserve Bank of Zimbabwe, 1996). At the same time interest rates on the money market were declining, two companies that offered more attractive rates of return on investment were being listed on the market. However, while the industrial index was performing well, the mining index was adversely affected by the stagnation in metal prices on the international market.

The Regulation of the Stock Exchange

In addition to the statutory legislation, the Exchange rely heavily on the concept of self-regulation. The regulatory framework of the Exchange is based on the British model which emphasises self-regulation by members. The Exchange has no regulatory agent. However, plans are currently underway to adopt the US model with the establishment of a securities commission. Until 1 May 1996, the regulatory framework consists of three main elements -- statute law, non-statutory determined accounting standards, and the Exchange's listing rules and regulations. The non-statutory determined accounting standards (that is, the adopted IASs) have now been codified.

The regulatory framework is briefly discussed here. It is, however, taken up again for detailed analysis in Chapter III.

Listing Requirements

Securities are admitted on the Official List provided they meet certain basic criteria which ensure a fair, liquid and regular market. Thus, a company applying for listing on the Exchange must conform with the Listing Rules and Regulations of the Listing Committee of the Exchange which include the following:

(a) The company must offer to the public a minimum of one million shares with a value of not less than Z$500,000.00;

(b) The details of the structure of the share capital, loan capital and the borrowing powers of the company;

(c) The offer to the public must represent not less than 30 per cent of the issued equity capital of the company. This excludes shares held by those controlling the business or their nominees;

(d) The Memorandum and Articles of Association of the company and those of its subsidiaries, if any, must comply with the requirements of the Exchange whether or not required by law. For instance, if an established company has power, either expressly or by implication, to appoint a company as one of its directors, the Exchange requires an undertaking as a resolution from its directors that such power will never be exercised. With a new company, this power should specifically be excluded;

(e) The spread of shareholders of the company existing at the close of an offer is sufficiently wide to justify the listing. The Listing Committee regards approximately 300 shareholders as a minimum requirement;

(f) A statement by the directors that in their opinion the working capital available is sufficient, and cash flow requirements adequately satisfied. If not, how it is proposed to provide the additional working capital thought to be necessary by the directors. A cash flow projection for the two year period after the issue should be signed by the directors and lodged with the Exchange;

(g) A report by the company's auditors in respect of the last five completed financial years of the company;

(h) The name, history, and description of the company's interests and activities;

(i) The share certificates should not exceed 30 centimetres in breadth and 26 centimetres in depth; and

(j) A specimen copy of the share certificate should be submitted to the Exchange for approval.

In addition, companies to be listed are expected to comply with the Rules of the Exchange concerning acquisitions and mergers, sale of assets, transfers of securities, and dividend declarations.

The Listing Committee reviews registration statements and prospectuses of companies seeking listing to satisfy itself that all the required information is presented, and that they are not misleading. If the Listing Committee is satisfied with the information, it recommends the company to the Committee of the Exchange for approval of the registration. If not, it recommends non-registration. However, in most cases, deficiencies are normally corrected by the company and approval is eventually granted, except in cases of fraud or mis-representation. It must be stressed that the Listing Committee is not concerned with the intrinsic value of the securities being

issued, but only with the presentation of complete and accurate information. Prospective investors are expected to make their own investment decisions based on the information presented.

Under Provision 8.11 of the ZSE's (1992) Members' Rules, securities shall be removed from the Official List under any of the following circumstances:

(a) The listed company being placed in liquidation or under judicial management whether provisional or final;

(b) On receipt of written request from the chair of the board of directors or the secretary of the company to de-list its securities;

(c) On expiration, conversion or redemption of options, redeemable preference shares, debentures, notes, loans or other securities of a similar nature; or

(d) Non-payment of fees and charges due and unpaid within one month after written notice of non-payment has been served by the Exchange (Part 8 of Appendix C to Provision 8.13 of Members' Rules).

In addition to the above, The Committee of the Exchange have the power to de-list, under Provision 8.01 of Members' Rules, any security if it is satisfied that:

(a) There has been a failure to comply with any of the terms and conditions of listing;

(b) There has been a failure to comply with any of the Exchange's requirements; or

(c) Such action is necessary in the interest of the public.

Any action taken under the Provision 8.01 is circularised immediately to all members, and such facts may also be published in a national newspaper.

Information Disclosure Requirements

The Exchange insists on public disclosure of the fullest possible information about a company's operations, profitability, financial health, growth, and prospects so that the investing public and shareholders in particular, can make informed judgement about their investment decisions. During an interview by the investigator with the chief executive of the Exchange, he emphasised that the Exchange holds the view that disclosure - initially and on a continuing basis -- is fundamental to the whole system of a free and unfettered market in securities, and it is the basic principle running through its listing requirements.

To ensure that companies intending to apply for listing on the market commit themselves to the Listing Agreement, the Committee of the Exchange requires them to submit to it a certified copy of a sworn declaration of a resolution taken at a meeting of the board of directors of those companies. The resolution should state that subject to the provisions of the Zimbabwe Stock Exchange Act, 1973 (Chapter 198), and in particular to the right of appeal contained therein; it is resolved that the company will:

> (a) keep the Exchange informed of any information necessary to enable the shareholders and the public to appraise the position of the company, and to avoid the establishment of a false market in its shares; and
>
> (b) comply with the requirements of the Exchange for listed companies as amended from time to time that are now or hereafter may be in force.

A company which fails to comply with the requirements outlined above risks being removed from the Official List of the Exchange. A major potential repercussion

of a removal of a company's shares is that the company will find it extremely difficulty to raise new capital to finance expansion; especially in emerging economies where investible capital is endemically scarce.

The Stock Exchange Annual Reporting Rules

The Exchange places a continuing periodic reporting obligation on public listed companies. They are obliged to report any relevant, material information necessary to enable present and potential investors to appraise their financial position and performance to avoid the establishment of false market in their listed securities. The listing agreement of the Exchange requires that published annual financial statements disclose certain information in addition to those required by the Companies Act and the pronouncements of the accountancy profession (see Appendix B).

The Exchange also has a general requirement of timely reporting. It requires listed companies to send to their shareholders audited financial statements at least 21 days before a company's annual general meeting (AGM). Thus, while the Companies Act requires public companies registered in Zimbabwe to publish audited annual reports and accounts within 24 weeks after their financial year-end, the Exchange requires listed public companies to report publicly within 21 weeks after the end of their financial year. In addition, three copies of the said accounts should be submitted to the chief executive of the Exchange 22 days before the AGM.

Investor/Shareholder Protection Code

To protect the investing public from fraudulent practices and other abuses, the Exchange, in its regulatory capacity, controls the activities of stockbrokers in several ways. First, it makes market-making rules and regulations. Second, it ensures that as required under the Zimbabwe Stock Exchange Act, registered stockbrokers purchase and maintain professional indemnity insurance. This is to ensure that any loss resulting

from negligence or dishonesty of any of the employees or associate members of registered stockbrokers are made good.

In addition, the Committee of the Exchange has established a Security Fund, in accordance with Section 74 of the Zimbabwe Stock Exchange Act. The Security Fund is managed by a board of trustees which is a body corporate; capable of suing and being sued in its own name. The Act requires this board to ensure that the total value of cash and securities in the Fund at all times should exceed Z$50,000; of which not less than one-fifth shall at all times be available in cash at 90 days' notice.

The Security Fund serves as a last resort to compensate any person who suffers loss in consequence of: (1) the dishonesty, insolvency, default or death of a registered broker or a broking member; or (2) the dishonesty of an employee or associate member or other agent of a registered stockbroker. The board of trustees of the Security Fund requires applicants to the Fund to exhaust all legal remedies available to them regarding the loss to which the application relates. The loss should be in connection with: (1) the ordinary practice of the registered stockbroker, and (2) any moneys, securities, and other property entrusted to the registered stockbroker or his employee or associate member or other agent in the course of the practice.

The Security Fund is financed by transfers from the funds of the Exchange, contributions from stockbrokers required by law, income accruing from investments of its moneys and insurance effected on behalf of the Fund, borrowings and sums recovered from the estates of a dead or bankrupted stockbroker.

The third means by which the Exchange protects the investing public is that it conducts investigations into any alleged malpractices by stockbrokers. Finally, it ensures that stockbrokers are in sound financial position at all times. It does this by an unannounced on-site inspection of accounts of stockbrokers with qualified auditors in attendance. On 20 December 1995, for instance, Mr. Gibson Zhisho Mpabanga, a

stockbroker and his company, Allied Capital Markets Corporation (Pvt.) Limited were suspended from carrying on business as registered stockbrokers because of liquidity problems. They were declared defaulters under Section 33(1)[g] of the Zimbabwe Stock Exchange Act 1973.

Insider Trading

In spite of the fact that the Exchange has traditionally been concerned with promoting and maintaining a fair and an orderly market in securities, there are no established formal surveillance facilities designed to identify insider trading nor any legislation in Zimbabwe prohibiting such trading. However, the Committee of the Exchange or the Minister of Finance unreservedly has the right to investigate any unusual movements in prices, volume of securities or any suspicious dealings. The Zimbabwe Stock Exchange Act has no provision prescribing sanctions against insider trading. Because there is no regulation prohibiting insider trading, it is hardly to be considered as a criminal offence as it is in other countries such as the US, UK, and Ghana. There is only one reported case of insider trading (in 1990) since the establishment of the Exchange in 1946. This case involved two directors of a stockbroking firm who used shareholders stocks to the value of Z$5,708,200 placed with a discount company to buy shares in Kadoma Consolidated Industries (Pvt.) Limited which had just been listed without the knowledge and permission of the shareholders.

The Exchange relies on the code of professional conduct of the various self-regulatory bodies as a means of policing insider trading. For instance, the ICAZ has no specific ethical code of conduct relating to the abuse of inside information. But the ICAZ generally regard insider trading by its members as improper, and a subject for disciplinary action. The ICAZ does, however, emphasise the importance of

independence and the avoidance of conflicts of interests. The obligation on an auditor is to treat information obtained during an audit engagement as confidential, and to use it only for the legitimate purpose of the audit and preparation of his report.

The issue of whether or not the informational effects of insider trading rules are beneficial in terms of promoting stock market price formation efficiently has not yet been resolved among academics.

Summary

This chapter has examined the microstructural characteristics of the Exchange. It has also described the organisation of the Exchange and its historical development. An assessment of the impact of the liberalisation policies introduced lately by the Government of Zimbabwe on the Exchange has also been presented in this chapter.

Further, it has evaluated the Exchange importance to the economic development and growth of the Zimbabwe Economy. Evidence presented in this chapter suggest that the Exchange is both inactive and insignificant in the Zimbabwean economy. It has also established that the development of the Exchange will not constrain the development of the other institutions in the financial market system in Zimbabwe. Thus, development of the stock market is complementary to the degree of financial depth of Zimbabwe's economy.

Finally, the chapter has presented the mechanisms by which the Exchange regulates trading in securities, the economic behaviour of its member firms, and its policy on reporting and disclosure of information required of listed companies.

CHAPTER III

THE REGULATORY FRAMEWORK FOR FINANCIAL ACCOUNTING AND REPORTING IN ZIMBABWE

> Good policy analysis is not about choosing between the free market and government regulation. Nor is it simply deciding what the law should proscribe.
> (Ayres and Braithwaite, 1992, p. 3)

This chapter examines the legal and institutional framework of financial accounting and reporting in Zimbabwe. Specifically, it focuses on the processes of setting accounting standards and adopting IASs, and the mechanisms for monitoring published accounts and enforcing compliance with accounting standards in Zimbabwe. The sources of influence on corporate financial accounting and reporting in Zimbabwe are discussed in detail in the sections which follow.

The Legislative Framework

The legal system governing business enterprises in Zimbabwe originated from that which was operating in the Cape Province of South Africa in 1891; which was in itself based on Roman-Dutch law, borrowing from English Common law where necessary. Consequently, the present law in Zimbabwe consists much of English commercial, company, and insolvency laws. In many cases, the legislative framework has been strengthened by the persuasive authority of English and South African judicial precedents. The legal framework establishes the basis of property rights, contractual relationships, forms of incorporation, and the rights and responsibilities of the participants on the ZSE. It also specifies the powers and responsibilities of the government supervisory authority

(the Ministry of Finance), and self-regulatory organisations such as the ICAZ, and the ZSE. The legal framework also deals with the resolution of commercial disputes by either conciliation or arbitration through the general court system or an extra-judicial body such as a commercial tribunal.

The Companies Act

The activities of companies are regulated by the Companies Act, 1952 (Chapter 190). Like many Commonwealth countries, Zimbabwe modelled its companies law (Chapter 190) on that of the UK's Companies Act, 1948. The present Act which came into force on 1 April 1952 consolidates and amends laws that were operative in the then Rhodesia relating to the constitution, incorporation, registration, management, administration and liquidation of companies. The Companies Act is primarily concerned with the protection of existing and potential investors and creditors of companies with limited liability status. It sets out the general framework for financial accounting and reporting. The Act stipulates only the basic minimum requirements of financial accounting and reporting. Since it is limited both in coverage and in detail, the Act is inadequate to ensure a satisfactory standard of corporate financial reporting. These minimum financial and reporting rules are, however, supplemented by IASs adopted by the ICAZ as their own authoritative prouncencements.

The Act requires companies registered under it to keep accounting records which sufficiently and accurately explain their financial position and performance. Specifically, every company is required to keep, in the English language, proper books of accounts regarding its assets and liabilities, sales and purchases, all sums received and expended and the matters in respect of which the receipts and expenditures take place. The books of accounts must give a true and fair view of the state of the company's affairs and to explain its transactions. Particularly, every balance sheet of a company should give a true and fair

view of the state of affairs of the company as at the end of its financial year. Furthermore, every profit and loss account should present a true and fair view of the profit or loss of the company for the financial year.

Besides the requirements to publish a balance sheet and a profit and loss account, there is also a legal obligation on companies to include a directors' report in their published annual report and accounts. Except the content, the Act does not specify a particular format for the directors' report.

The Act requires holding companies, with certain exceptions, to prepare group accounts and lay before the company in AGM along with its balance sheet and profit and loss account. These usually take the form of a consolidated balance sheet, consolidated profit and loss accounts, and notes to the accounts. Because a cash flow statement is required under the adopted IAS 7, this statement is also prepared on a consolidated basis. Legally, group accounts are required to give a true and fair view of the state of affairs and profit and loss of the holding company and its subsidiaries. The group accounts must exclude inter-group balances and any profit or loss arising from transactions within the group in so far as those profits or losses may not have been realised or incurred so far as concerns the members of the holding company.

The books of accounts are required to be prepared on a regular basis in accordance with the disclosure requirements prescribed in the Seventh Schedule to the Act. Except on certain conditions, the accounting records must be maintained in Zimbabwe and must be retained for eight years, commencing from the date on which the transactions or the operations to which they relate were completed.

Every company registered in Zimbabwe is legally required to appoint an independent external auditor. Private companies, under certain conditions, are however, exempted from this requirement. The auditor is required to make a report to members of

the company on the financial statements examined by him. Under Section 130(1) of the Act, the auditor's report should contain statements as to the following matters:

> (a) whether, in his opinion, the balance sheet and profit and loss account of the company, or in the case of a holding company submitting group accounts, the said accounts of the company and the group accounts are properly drawn up in accordance with the provisions of this Act so as to give a true and fair view of the state of the company's affairs at the date of its balance sheet and of its profit or loss for its financial year ended on that date; or
>
> (b) in the case of a company entitled to the benefit of Part III of the Seventh Schedule, whether, in his opinion; the balance sheet and profit and loss account of the company or, in the case of a holding company submitting group accounts, the said accounts of the company and the group accounts are properly drawn up so as to disclose the state of the company's affairs at the date of its balance sheet and its profit or loss for its financial year ended on that date, so far as is required by the provisions of this Act applicable to the class of company concerned.

The external auditor is also required under Section 130(2) of the Companies Act to include in his report, statements which, in his opinion, are necessary if:

> (a) he has not obtained all the information and explanations which to the best of his knowledge and belief were necessary for the purposes of his audit;
>
> (b) so far as appears from his examination, proper books of account have not been kept by the company;
>
> (c) proper returns adequate for the purpose of his audit have not been received from branches not visited by him;
>
> (d) the company's balance sheet and profit and loss account are not in agreement with the books of account and returns from branches.

The auditor's report should be attached to a company's financial statements signed by, at least, two directors and sent to all persons entitled to receive notices of the company's AGM 14 days before the date of such meeting.

Companies are required under the Act to file audited annual financial statements with the Registrar of Companies where they will be available for public inspection. The

Registrar is not obliged by the Act to perform, and does not perform, a quality control function. The Registrar only serves as a central public depository of accounts. Companies are also required to file annual returns with the Registrar, the content of which is prescribed by the Act. Unlike the UK's Companies Act, there are no provisions in Chapter 190 exempting small companies from any of its requirements.

It is an offence and is punishable by either a fine, imprisonment or both under Sections 117(5), 118(4) and 119(6) of the Companies Act if a director of a company fails to take reasonable steps to secure compliance by the company with the requirements of the Act or has by his own wilful act been the cause of any non-compliance by the company.

Unfortunately, like most laws governing the activities of companies, the Zimbabwean Companies Act does not define what is meant by the term "true and fair view." The lack of precise meaning of this phrase can be problematic in practice. Implicitly, it requires published financial statements to be factually correct and fairly presented in all material respects in accordance with the generally accepted accounting practice. However, since it is a legal concept a definitive explanation of what constitutes a true and fair view can authoritatively be laid down by a court of laws. There is no such court pronouncement on the subject in Zimbabwe to date. The situation is, however, different in the UK where the concept originated.[1] The former UK standard-setting body, the Accounting Standards Committee (ASC) obtained a legal opinion on the meaning of this concept in relation to the role of accounting standards (ASC, 1983). This opinion states that the court will interpret any published financial statements which do not comply with accounting standards as not showing a true and fair view. It elaborates further that a mere compliance with the standards, however, will not be a conclusive evidence that the financial statements show a true and fair view. Indeed, this opinion was supported in a

[1] This concept was first introduced in the UK by Section 13(1) of the Companies Act, 1947; re-enacted as Section 149(1) of the Companies Act, 1948 (Accounting Standard Committee, 1983).

UK case by The Honourable Mr. Justice Woolf in *Lloyd Cheyham & Co. Ltd. v. Littlejohn & Co. [1987] BCLC 303 at 313 QBD.* The trial Judge said, in his judgement delivered on 30 September 1985, that:

> While they *(accounting standards)* are not conclusive . . . and they are not as the explanatory foreword makes clear, rigid rules, they are very strong evidence as to what is the proper standard which should be adopted and unless there is some justification, a departure from this will be regarded as constituting a breach of duty. It appears to [me] important that this should be the position because third parties in reading the accounts are entitled to assume that they have been drawn up in accordance with the approved practice unless there is some indication in the accounts which clearly state that this is not the case. (Emphasis mine)

Implicitly, although accounting standards have no direct legal authority or effect, it appears highly probable that they will have a persuasive influence in a court's interpretation whether or not a company's published financial statements present a true and fair view. In determining whether or not a published accounts of a Zimbabwean company show a true and fair view, the courts in Zimbabwe are more likely to consider measurement and disclosure requirements of relevant adopted IASs as strong evidence of good practice acceptable to the ICAZ. Any departure from the requirements of the relevant IAS without either adequate disclosure and/or justification may be interpreted by Zimbabwean courts as not showing a true and fair view. This is because and, as noted earlier, the commercial and company laws in Zimbabwe have been and are being influenced, to a greater extent, by laws in the UK (both legislative and judicial precedents).

The Institutional Framework

The Accountancy Profession in Zimbabwe

Generally, accounting principles and practice in Zimbabwe are similar to those in the UK. This may be explained by the close historical and economic links between the two countries, and the co-operation between the members of the accountancy professions

of both countries. For instance, both employ private-sector approach to the regulation of financial accounting and reporting. The accountancy profession in Zimbabwe is self-regulated, and is controlled by the ICAZ. It was established on 11 January 1918 by Ordinance 14 of 1917. It is, however, regulated today by the Accountants Act (Chapter 215). Under this Act, the ICAZ is a statutory body corporate; capable of suing and being sued in its corporate name. The ICAZ is not a state body. It is financed entirely by its members. Its main duties under the Accountants Act are:

(a) To keep a register of persons entitled to practice in Zimbabwe as accountants;

(b) To conduct examinations;

(c) To encourage the study of accountancy;

(d) To form, support, and maintain a library for the use of members and students;

(e) To maintain integrity and status of the ICAZ, and where necessary discipline members; and

(f) To promote or assist in promoting legislation which is to the advantage of the ICAZ and its members.

As of March 1995, it has 1,300 registered members. It also has 500 students on its register. About one-half of its members are resident outside Zimbabwe, and about one-third of those resident in Zimbabwe are working in practice. Most members of the ICAZ have also qualified with the South African Institute of Chartered Accountants. There are several other accountants in the country who have qualified with some of the UK's professional accountancy bodies. However, in terms of the Accountants Act, only members of the ICAZ may describe themselves as public accountants or auditors in Zimbabwe. Legislation is currently underway to recognise other accounting qualifications

for audit purposes in the country. A body called Registered Accountants Board has been set up to facilitate the recognition of other accounting qualification in Zimbabwe. The work of public accounting firms in Zimbabwe consists primarily of auditing, accounting, tax, and general, personnel, and estate management advisory services (ICAZ, 1996).

The practice of public accounting and auditing is carried out through sole proprietorship and partnership forms of business organisation. The partnership form of organisation, however, dominates the practice of accounting in Zimbabwe. The use of limited liability company as a vehicle for practice, as currently done in Anglo-American countries, is not allowed in Zimbabwe. The self-regulation of the accounting profession in Zimbabwe is strengthened in two ways by the current arrangements which allows for the provision of accounting, taxation and auditing services in the country. First, since sole proprietorship and partnership firms do not have identity separate from their owners, the interests of the firms are closely aligned with those of the owners and the ICAZ (which regulate the accounting profession indirectly through the owners/practitioners). In addition, the individual owners/practitioners assume the ultimate responsibility and liability for service to the client. Second, since there is no clear separation of ownership from management of a sole proprietorship or a partnership firm, active participation of the owners/practitioners is assured. This, in turn, provides a base for a strong mutual monitoring system (Fama and Jensen, 1983b).

The ICAZ is a member of the International Federation of Accountants (IFAC), the IASC, the Eastern, Central and Southern Africa Federation of Accountants (ECSAFA), the Public Accountants and Auditors Board of Zimbabwe and the Accounting Practices Board (APB) in Zimbabwe. It also has representation on several other bodies in Zimbabwe including the Zimbabwe Association of Accounting Technicians, the Consultative Committee of Accountancy and Secretarial Bodies of Zimbabwe (CCASB) and the Securities and Exchange Consultative Committee.

The ICAZ is run by a Council of 15 members, two of whom are appointed by the Minister of Justice, Legal and Parliamentary Affairs. Members of the Council are elected on the basis of geographical representation. Figure 10.1 presents the organisational structure of the ICAZ. The President of the ICAZ is its ceremonial head. The Council serves as the policy-making body of the ICAZ. The Council delegates its routine and executive functions either to the Secretariat, headed by the Registrar, or to various designated Committees. The Registrar as the head administrator is responsible for the execution of the policies made by the Council. The Registrar's office also provides secretarial services to the APB and the CCASB.

The President's Advisory Committee is responsible for the financial, administrative, and staffing matters of the ICAZ. It is also charged with the responsibility of investigating any alleged mis-conduct by both members and non-members of the ICAZ. The members of the ICAZ are obliged to comply with the Rules of Professional Conduct issued by it. The rules are based on fundamental principles of independence, integrity and objectivity, and accord with international guidelines on professional ethics.

The ICAZ members are liable to disciplinary action as provided for in the Accountants Act (Chapter 215) if they commit acts of professional mis-conduct or wilful breach of the Rules of Professional Conduct. They are also required to maintain standards of professional competence through compliance with the ICAZ's requirements for continuing professional education.

The ICAZ's Rules of Professional Conduct require members to be independent when undertaking an audit engagement. In addition, members of the ICAZ acting as auditors to companies are obliged to satisfy themselves that the audited financial statements comply with accounting standards. If a material departure is not justified and that the true and fair view shown by the financial statements is thereby impaired, they

should qualify their reports, and if practicable, quantify the financial effect of the departure.

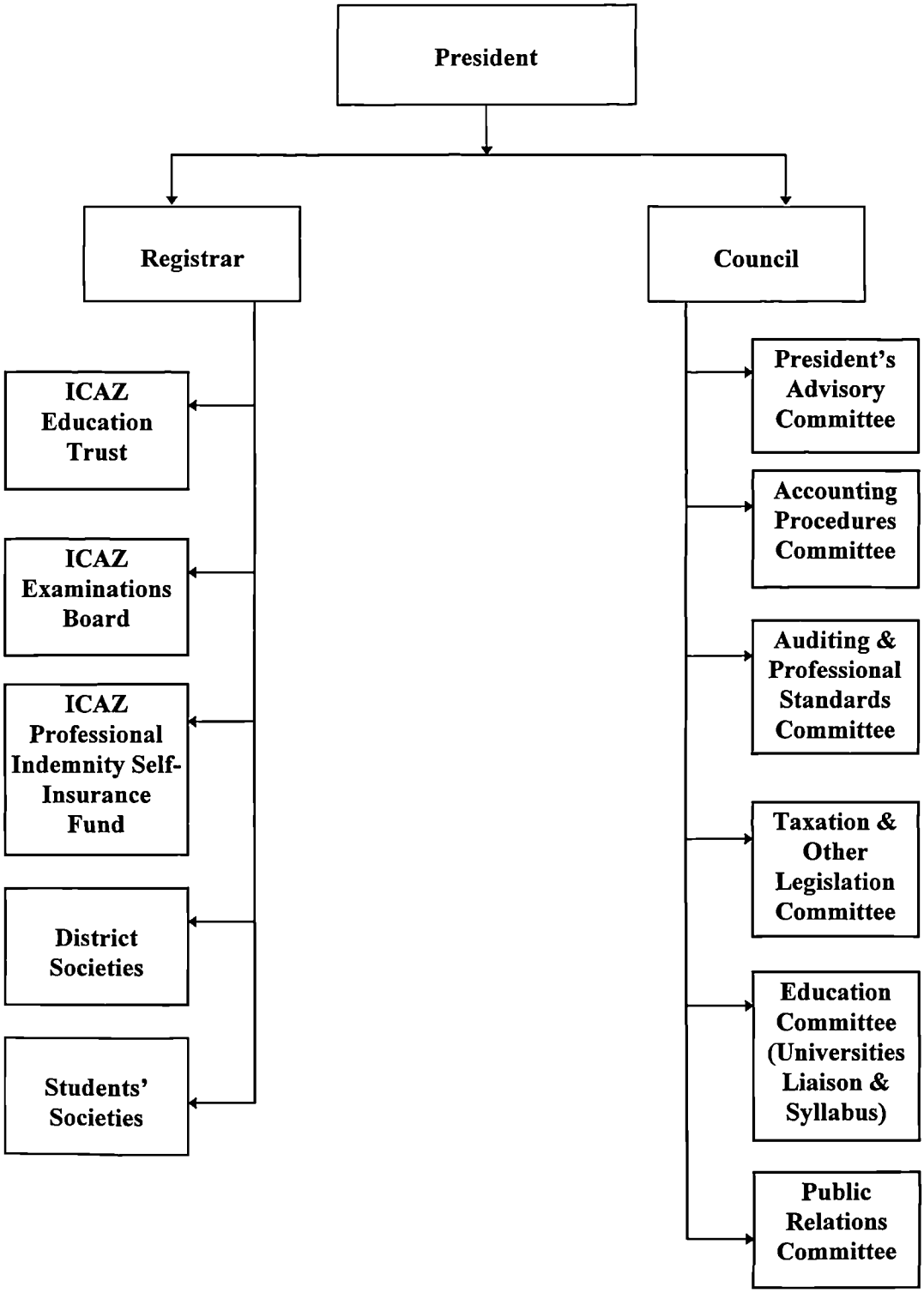

Figure 3.1 The organisational structure of the Institute of Chartered Accountants of Zimbabwe†

† Adapted from the ICAZ (1995).

However, members of the ICAZ serving in capacities either as directors or officers of companies, are obliged to ensure that the existence and purposes of accounting standards are fully understood by non-member directors and other officers. They should also use their best endeavours to ensure that the standards are observed, or if they are not observed, that significant departures from them are disclosed and explained in the financial statement and their effect, if material disclosed. Members acting as reporting accountants are not only required to ensure disclosure of material departures from accounting standards, but also to the extent that their occurrence is stated or implied to justify them. As noted earlier, it is an offence under the Act if a director or an officer of a company fail to secure compliance by the company with the requirements of the Act.

The Examination Board is responsible for setting, marking, and moderating the ICAZ's examinations. With its commitment to promote professional and human resource development in Zimbabwe, the ICAZ established an Educational Trust in 1973, and charged it with these responsibilities. The Trust has actively promoted and partly financed the establishment of the Accountancy Department at the University of Zimbabwe. It also served as a conduit for donations toward the foundation of an accountancy library at the National University of Science and Technology in Zimbabwe. The Education Committee handles all matters relating to education and training. It liaises with universities in Zimbabwe that offer degree programmes in accountancy on several issues. For instance, the Education sub-committee has been instrumental in harmonising the syllabuses of the universities and those of the ICAZ's final qualifying examinations. It has also assisted in the introduction of Diploma in Applied Accountancy at the Centre for Distance Education of the University of Zimbabwe. The Educational Trust also assisted this project with finance and study materials. The ICAZ uses its Student Societies as a means of educating its registered students on current accountancy issues and organising social and sporting events.

The Taxation and Other Legislation committee is primarily concerned with taxation and other legislation that affect the operations of business enterprises in Zimbabwe. It liaises with the Ministry of Finance, and the Department of Taxes on the implementation of budget proposals and their impact on Zimbabwe economy. It also reviews existing tax laws and other corporate legislation with the view of proposing legislative amendments. It has established links with the Corporate Law Committee of the South African Institute of Chartered Accountants with the aim of working toward a regional compatibility in corporate legislation of the countries in that sub-region.

The District Societies of the ICAZ, based in Harare and Bulawayo, are concerned with the organisation of continuing professional education programmes interspersed with social and sporting activities for the member of ICAZ at local levels. They also provide accountancy career guidance service to secondary schools in their respective areas.

Accounting and Auditing Standards in Zimbabwe

Accounting Standards

Bromwich (1981, p. 30) defined accounting standards as ". . . uniform rules for external financial reporting applicable either to all or to a certain class of entity." The need for mandatory accounting standards has been necessitated by several factors. First, as it will become clear in Chapter IV, mandating the production and public dissemination of corporate accounting information was a direct response to the failure of the market system to adequately provide accounting information. Second, it is a means to resolve any potential conflicts of interests of the various user groups of accounting information (Underdown and Taylor, 1985). Third, it is a means of reducing available alternative methods for measuring and reporting economic events that affect business enterprises. Thus, it narrows the areas of differences among firms in disclosure, measurement, and presentation of information in corporate reports, so as to promote consistency in reporting

and the comparability of financial statements issued by companies especially those in the same or similar industries. Finally, according to the US accounting standard-setter, Financial Accounting Standard Board (FASB), accounting standards:

> . . . are essential to the efficient functioning of the economy because decisions about allocation of resources rely heavily on credible, concise, and understandable financial information. Financial information about the operations and financial position of individual entities also is used by the public in making various other kinds of decisions (FASB, 1987, paragraph 2).

The Council of the ICAZ is primarily responsible for the establishment and publication of accounting standards in Zimbabwe. It is also responsible for the supervision of their application throughout the country. As indicated earlier, the standards issued or adopted by the ICAZ serve to supplement the accounting and reporting requirements of the Companies Act relating to measurement, presentation, disclosure, and content of financial statements.

Based on Benston's (1980) classification of accounting standards, as to how they are enforced, the Zimbabwe accounting standards can be described as privately-set. This private-sector approach to regulation of financial accounting and regulation has been criticised on two grounds in the literature. First, it is contented that because such standards may lack statutory authority and power of enforcement, they are likely to be challenged and over-ridden by the government or its agents. Second, standards set by private-sector institutions may not possess a high degree of legitimacy (Johnson and Solomons, 1984). The incorporation, in May 1996, of IASs into the Companies Act by the Companies (Financial Statements) Regulations (Chapter 190 [Statutory Instrument 62]) has mitigated the possible effect of the first criticism. The issue of the legitimacy of the private-sector standard-setting body in Zimbabwe is mitigated by the creation of the APB with a wider representation. The APB was established on 27 July 1977 by the ICAZ following its decision to adopt IASs as local standards. The function of the APB is to

review and approve, for adoption and use in Zimbabwe, the standards of the IASC. The membership of the APB consists of representatives from the ICAZ, the Associated Chambers of Commerce of Zimbabwe, the Chamber of Mines of Zimbabwe, the Confederation of Zimbabwe Industries, the Chartered Institute of Management Accountants, the Institute of Chartered Secretaries and Administrators in Zimbabwe. This wider representation distinguishes the APB from its UK counterpart, the ASC which was principally made up of persons drawn from the accountancy profession. This wider representation of the constituencies interested in corporate annual reports encourages general acceptance and reduction of the likelihood of non-compliance with the ICAZ's standards.

However, there is no academic on the APB. There are three explanations for this lack of academic representation on the APB. First, there are not many accounting academics in Zimbabwe and the few that are available are not active members of the ICAZ. Second, academics are not practitioners who will apply the standards in Zimbabwe. Third, the few academics in Zimbabwe have been noted to argue that IASs are irrelevant to Zimbabwe's environment (Hove, 1982, 1989, 1990), consequently, their inclusion may be anti-productive.

The APB must be distinguished from the Accounting Procedures Committee (APC) of the ICAZ (see Figure 3.1). This Committee comprises only members of the ICAZ (see the organisational structure of the ICAZ on page 74). It is from this Committee that the ICAZ's representatives on the APB are drawn. Exposure drafts issued by the IASC are examined by the APC and the APB and Zimbabwe's comments on the exposure drafts issued by the IASC are formulated by both the APC of the ICAZ and the APB and collated by the APC, on behalf of the ICAZ for transmission to the IASC. The Committee is also involved in the examination of IASC's standards for adoption by the ICAZ as Zimbabwe's standards after their ratification by the APB. When ratified, IASs become

Zimbabwe's accounting standards and are described as such. The IASs that are not ratified retain the identity of "IAS" in the country (for example, *Accounting for Hyper-inflationary Economies [IAS 29]*). At the time of writing, the ICAZ has adopted 27 IASs for use in the country (see Table 3.1).

When IASs do not deal with certain problems peculiar to the local environment, the ICAZ seeks to issue statements of interpretation or on how an IAS might apply to local conditions. Similarly, where provisions of IASs go beyond (or in rare instances, conflict with) Zimbabwe accounting standards and/or legislation, the Council of the ICAZ and the APB normally issue a new standard either to: (1) bring Zimbabwe practice wholly in line with the provisions of the IASs, or (2) distinguish between those provisions of the Zimbabwe accounting standards which comply with IASs, and those provisions which do not. Standards of this nature that are developed independently by the ICAZ are subject to a similar process of approval by the APB and are issued as Zimbabwe accounting standards. A standard that falls into this category is the *Supplementary Requirements for Foreign Borrowings (Guidelines on the Interpretation and Use of IASs 21 and 23)*. In addition, standards issued by the ICAZ prior to the establishment of the APB have all been ratified by that body.

Until 1 May 1996, the fact of non-compliance with an IAS was required to be disclosed in annual reports by way of a note or, in the event of non-disclosure, in the audit report, whether or not there is compliance with Zimbabwe law or accounting standard. However, since the above date, the adopted IASs have been codified and it is now illegal not to comply with those provisions which are relevant to the affairs of a company in Zimbabwe. The codified IASs are contained in the Companies (Financial Statements) Regulations, 1996 (Chapter 190 [Statutory Instrument 62]). The new legislation replaced the Seventh Schedule to the Companies Act, 1952. The provisions in the new law are outside the scope of this study as it is too early to assess the full effect of this change.

Table 3.1

The adopted International Accounting Standards in Zimbabwe

Number of standard[a]	Description of standard (revised and/or reformatted)	IAS effective date[b]	Equivalent UK standard[c]
IAS 1	Disclosure of Accounting Policies	1-1-75	SSAP 2
IAS 2	Inventories	1-1-76	SSAP 9 (revised)
IAS 4	Depreciation Accounting	1-1-77	SSAP12 (revised)
IAS 5	General Disclosures in Financial Statements	1-1-77	No UK equivalent[d]
IAS 7	Cash Flow Statements	1-1-94	FRS 1 (revised)
IAS 8	Net Profit/Loss for the Period, Fundamental Items and Changes in Accounting Policies	1-1-95	SSAP 17
IAS 9	Research and Development Costs	1-1-95	SSAP 13 (revised)
IAS 10	Contingencies and Events Occurring After Balance Sheet Date	1-1-95	SSAPs 17 and 18
IAS 11	Construction Contracts	1-1-95	SSAP 9 (revised)
IAS 12	Accounting for Taxes on Income	1-1-95	SSAP 15 (revised)
IAS 13	Presentation of Current Assets and Current Liabilities	1-1-95	No UK equivalent
IAS 14	Segmental Reporting	1-1-95	SSAP 25
IAS 16	Property, Plant and Equipment	1-1-95	No UK equivalent[e]
IAS 17	Accounting for Leases	1-1-95	SSAP 21
IAS 18	Revenue	1-1-95	No UK equivalent
IAS 19	Retirement Benefit Costs	1-1-95	SSAP 24
IAS 20	Government Grants and Assistance	1-1-95	SSAP 4 (revised)
IAS 21	Foreign Currency Transactions	1-1-95	SSAP 20
IAS 22	Business Combinations	1-1-95	FRSs 6 and 7
IAS 23	Borrowing Costs	1-1-95	No UK equivalent
IAS 24	Related Party Disclosures	1-1-95	FRS 8
IAS 25	Accounting for Investments	1-1-95	FRS 4
IAS 26	Retirement Benefit Plans	1-1-95	No UK equivalent
IAS 27	Consolidated Financial Statements and Accounting for Investments in Subsidiaries	1-1-95	FRS 2
IAS 28	Accounting for Investments in Associates	1-1-95	SSAP 1 (revised)
IAS 30	Disclosure in the Financial Statements of Banks and similar Financial Institutions	1-1-95	No UK equivalent
IAS 31	Reporting of Interests in Joint Ventures	1-1-95	No UK equivalent

[a] On adoption of an IAS, the ICAZ retains the numbering and designation of the original IASC standard.

[b] The disclosure requirements of the IASs with effective dates commencing on 1 January 1995 are different from those that were operational before and during 1994 which were used in constructing the disclosure measuring instrument in Appendix B.

[c] The UK's Statement of Standard Accounting Practice (SSAP) and Financial Reporting Standard (FRS) accord very closely with equivalent IASs. In most cases, compliance with these standards automatically ensures compliance with equivalent IASs.

[d] No equivalent SSAP, but provisions of the IAS 5 are required to be disclosed by the 1985 Companies Act.

[e] Some provisions of IAS 16 relating to depreciation are very similar to those of the UK SSAP 12.

Belkaoui (1994, pp. 75-76) has detailed the rationale behind the adoption strategy of IASs by several countries. They include the following:

(a) to reduce direct costs of setting and producing accounting standards by themselves;

(b) to join the global drive of harmonising accounting standards across countries;

(c) to facilitate the growth of foreign direct investment for which most emerging economies are desperately in need;

(d) to enable local professional accountancy bodies to emulate well-established professional standards of behaviour and conduct; and

(e) to legitimise its status as a full-fledged member of the international community.

Several writers have criticised the adoption of IASs by emerging economies (Amenkhienan, 1986; Hove 1989; Briston, 1990). For instance, Amenkhienan (1986) argued that each country should develop its accounting standards according to its needs and objectives. He further argued that each country has its unique structural variables, and these variables should determine the manner in which accounting standards are developed.

The authority of the IASC in Zimbabwe

Although the IASC has no legal authority in Zimbabwe, its standards when adopted by the ICAZ and the APB have legal mandate in the country. Its legitimacy in Zimbabwe is, however, professionally supported by the ICAZ. For instance, according to Paragraph 4 of the Preface to Statement of International Accounting Standards 1993, member bodies of the IASC (including the ICAZ) agree to support its objectives by undertaking to:

> . . . support the work of International Accounting Standards Committee by publishing in their respective countries every International Accounting

Standard approved for issue by the Board of International Accounting Standard Committee and using their best endeavours:

(a) to ensure that published financial statements comply with international accounting standards in all material respects and disclose the fact of such compliance;

(b) to persuade governments and standards-setting bodies that published financial statements should comply with international accounting standards in all material respects;

(c) to persuade authorities controlling securities markets and the industrial and business community that published financial statements should comply with international accounting standards in all material respects and disclose the fact of such compliance;

(d) to ensure that the authorities satisfy themselves that the financial statements comply with international accounting standards in all material respects;

(e) to foster acceptance and observance of international accounting standards internationally (IASC, 1995).

The scope of IASs in Zimbabwe

Paragraph 12 of the Preface to Statements of IASs 1995 states that "international accounting standards are not intended to apply to immaterial items" (IASC, 1995). In Zimbabwe, the adopted IASs do not over-ride statutes or government regulations. The standards are also to be applied to the audited financial statements of any commercial, industrial or business enterprise. In addition, their wider application by other forms of business organisation such as co-operative societies and not-for-profit organisations to their financial statements intended to give a true and fair view of their financial position and performance is recommended in Zimbabwe.

Auditing Standards

The auditing practice in Zimbabwe has largely been influenced by practice and custom in the UK, and as a result, there are relatively few significant differences between standards and procedures followed in the two countries.

As is the case with accounting standards, the ICAZ through its Auditing and Professional Standards Committee (APSC) adopted for use in Zimbabwe all the International Standards on Auditing issued by the IFAC to date. In addition to the auditing standards, the ICAZ has also adopted all other auditing guidelines and statements that have been issued by the IFAC to date.

The international standards on auditing are prepared by the IFAC in consultation with its member bodies including the ICAZ. In Zimbabwe, the APSC is responsible for scrutinising drafts and newly published standards on auditing, and advising ICAZ members on their application. The members of the ICAZ are registered as public auditors in terms of the provisions of the Public Accountants and Auditors Act, 1995.

In addition to the legal requirements as to the content of external auditors' report, the ICAZ requires that the second paragraph of audit report should read:

> We conducted our audit in accordance with *International Standards on Auditing*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material mis-statement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by directors, as well as evaluating the overall financial statement presentation. (Italics not in original)

Table 3.2 details all the international auditing standards that have been adopted, without modification, for use in Zimbabwe. The ICAZ adopted international auditing standards to improve the usefulness and enhance the credibility of financial statements of Zimbabwean registered companies. Another reason behind the adoption is that Zimbabwe relies, to a greater extent, on foreign investment, and foreign investors will be more likely to channel funds into the country if they have confidence in the accounting and auditing standards employed in Zimbabwe. The monitoring and the enforcement of the adopted international auditing standards in Zimbabwe are the responsibilities of the ICAZ which subscribe to the international standards.

Table 3.2

The adopted international auditing standards in Zimbabwe

No. of standard	Description of standard	Date of issue
1	Objectives and Basic Principles Governing an Audit	October 1991
2	Audit Engagement Letters	June 1980
4	Planning	February 1981
5	Using the Work of an Other Auditor	July 1981
6	Risk Assessment and Internal Control	October 1991
7	Control of the Quality of Audit Work	September 1981
8	Audit Evidence	January 1982
9	Documentation	January 1982
10	Using the Work of an Internal Auditor	July 1982
11	Fraud and Error	October 1982
12	Analytical Procedures	October 1990
13	The Auditor's Report on Financial Statements	October 1989
14	Other Information in Documents Containing Audited Financial Statements	February 1992
15	Auditing in an EDP Environment	February 1984
16	Computer-Assisted Audit Techniques	October 1984
17	Related Parties	October 1984
18	Using the Work of an Expert	February 1985
19	Auditing Sampling	February 1985
21	Date of the Auditor's Report, Events After the Balance Sheet Date, Discovery of Facts After the Financial Statements Have Been Issued	October 1985
22	Representation by Management	October 1985
23	Going Concern	October 1989
24	Special Purpose Auditor's Reports	October 1986
25	Materiality and Audit Risk	October 1987
26	Audit of Accounting Estimates	October 1987
27	The Examination of Prospective Financial Information	February 1989
28	First Year Engagements - Opening Balances	July 1990
30	Knowledge of Business	August 1993
31	Consideration of Laws and Regulations in an Audit of Financial Statements	July 1993

Taxation

Generally, tax laws in Zimbabwe have less or no effect on the financial accounting and reporting system in the country. As it is in the UK, accounting profits and taxable profits are not based on the same rules. For instance, taxable profits are computed by adjusting the accounting profits which are based on historic cost. In computing taxable

profits, the tax authorities often begin with accounting profit and adjusting in for deductions made which are not allowed for tax purposes such as:

(a) Capital expenditure written-off against revenue, including depreciation on fixed assets.

(b) Expenditure on entertainment.

(c) Expenditure incurred, other than for the purpose of a company's trade or production of income.

(d) General provisions to cover liabilities which had not arisen by the end of the accounting period in question.

In Zimbabwe, it is not permissible for tax purposes to use a Last-In, First-Out (LIFO) method to value inventories. The First-In, First-Out (FIFO) and the Weighted-Average methods of valuing inventories are acceptable to the tax authorities.

Companies are required to prepare income returns on the accrual basis. The cash basis is not acceptable, with the possible exception of income from building and construction contracts where a completed-contract basis can be used.

Monitoring and Enforcing Mandatory Disclosure Requirements

The Exchange can not be regarded as a significant force in regulating corporate accounting and reporting practices in Zimbabwe. The task of ensuring that its annual mandatory disclosure requirements are adhered to by the listed companies is accomplished by the ICAZ.

Like the US Securities and Exchange Commission (SEC), the ICAZ employs a *review* method in monitoring and enforcing compliance with statutory and regulatory disclosure requirements. However, while the SEC uses a more rigid, prosecution-oriented approach to enforcement of disclosure regulations, the ICAZ uses a more flexible and co-

operative approach (to be explained in detail later in Chapter V). The ICAZ does this through its APC whose function is also to monitor published financial statements of the public companies and state-owned enterprises in order to: (1) ascertain the extent to which they comply with Zimbabwe's accounting standards (the adopted IASs); and (2) encourage compliance with those standards as far as it is practically feasible.

In a regulatory regime where some level of non-compliance with regulatory standards is tolerated (that is, where the regulatory enforcement style is co-operative), as it was in Zimbabwe before May 1996, it is tempting to conclude that either the standards are laxly enforced or the regulatory agent is "captured" by the regulated companies. It is established in the regulatory economics literature, on the contrary, that by choosing to enforce, informally, standards of compliance lower than the statutory and regulatory requirements, the regulatory agent is able to obtain higher, if not full, compliance than would be possible with strict enforcement as is implicit in the deterrence-oriented model (Scholz, 1984a, 1984b; Kambhu, 1989).

The Review Process and its Object

The monitoring procedure employed by the APC to discharge its function is now briefly outlined. Every year, the APC randomly selects the most recent published annual accounts and reports of 25 public companies and state-owned enterprises for review. The selected annual accounts and reports are allocated to members of the APC for a critical review. The members of the APC are required to report any material non-compliance with disclosure requirements of the adopted IASs. To ensure fairness, integrity, and impartiality in the peer review process, no member of the APC is allocated an annual report and accounts of a company with whom s/he (or his or her) firm is associated through audit engagement or employment.

The reports of the reviewers are considered by the APC. The APC has two options on receipt of reviewers' reports either: (1) to adopt the report with or without amendments, or (2) not to adopt the report. The adopted reports (after amendments, if necessary) are forwarded to the external auditors of the business enterprises concerned. These auditors are asked to respond to the APC's comments. The feedback from the auditors are then sent either to the chair of the audit committee or the chief executive/managing director of the companies or the state corporations concerned so that the issue in question is not repeated in subsequent annual reports and accounts that the company may issue. Unlike the UK's Financial Reporting Review Panel (FRRP), the ICAZ's APC does not compel instant corrective action even if this involves a revised set of accounts. It was also evident from an interview held with the Registrar of the ICAZ, when the present investigator paid a study visit to the Exchange in May 1996, that the APC does not act on information received from sources such as qualified audit reports, and press comments.

The purpose of the review exercise is to assist public companies, state-owned enterprises and their auditors to adequately satisfy the information needs of users of corporate annual reports, and to achieve a high level of compliance with the mandatory disclosure requirements in the future. This, in turn, also enables the ICAZ to fulfil its obligations as an associate member of the IASC within Zimbabwe.

It must be pointed out, however, that the primary concern of the APC is to ensure compliance with the IASs. Nevertheless, it has a secondary obligation to see to full compliance with all relevant disclosure provisions of the Companies Act (Chapter 190), and the extant disclosure requirements of the stock exchange.

Before 1 May 1996, companies whose published annual accounts were reviewed were not obliged by law to adhere to the comments and conclusions in the reports of the APC. Following the amendment to the Companies Act, the situation has, however, changed. According to the Companies (Financial Statements) Regulations 1996, public

companies and their auditors are obliged by law to comply with the disclosure requirements of the adopted IASs in as far as they are relevant to the affairs of the company. Thus, the enforcement mechanism of the financial disclosure regulatory regime currently in operation in Zimbabwe (after 1 May 1996) is modelled on the deterrence style of enforcement of regulation (to be explained later in Chapter V). As noted earlier, this enforcement style is different from that which was in operation before, during and after 1994, but before 1 May 1996. The regulatory enforcement style employed in 1994 is the subject of the empirical investigation of this study.

Summary

In this chapter, the legal and the regulatory framework for corporate financial reporting and accounting has been examined. The financial accounting standards in Zimbabwe are the accounting pronouncements of the IASC, while auditing standards are those of the IFAC. Until recently, financial accounting and reporting in Zimbabwe was self-regulated. It is the responsibility of the ICAZ to monitor published accounts of both listed and unlisted public companies and to enforce compliance with financial accounting standards in the country. It also ensures that international auditing standards are being complied with by its members in their external audit engagements. Following the codification of the adopted IASs in May 1996, Zimbabwe has moved from its traditional base of individual professional judgement to a more prescriptive, legally enforceable regulatory framework.

PART B

THEORETICAL FRAMEWORK

CHAPTER IV

THE THEORETICAL FRAMEWORK FOR CORPORATE DISCLOSURE

> The validity of a particular theory is a matter of its logical derivation from the assumptions which it makes. But its applicability to a given situation depends upon the extent to which its concepts actually reflect the forces operating in that situation.
>
> (Robbins 1933; quoted by Allen, 1983, p. 157)

This chapter discusses the theories that underpin corporate disclosure. The information in corporate annual reports is a product of differing sets of demand and supply forces. This chapter focuses only on the factors that affect the supply of information by listed companies to the investing public. Specifically, the emphasis is on market and regulatory forces that affect the content, form, and timing of corporate annual reports.

The relevant literature assessing the validity of the theories underpinning corporate disclosure is voluminous and complex. For the purposes of exposition, this chapter concentrates only on the most influential studies in the area. Consequently, the theories have broadly been grouped into two: (1) free market; and (2) regulatory theories. The regulatory theory sub-group is further broken down into two: (a) the public interest; and (b) the interest group or "capture" theories. The capture theory also has two versions, namely the political scientists version and that of welfare economists. The theories are represented diagramatically in Figure 4.1. The remainder of this chapter presents a detailed review of each of these theories.

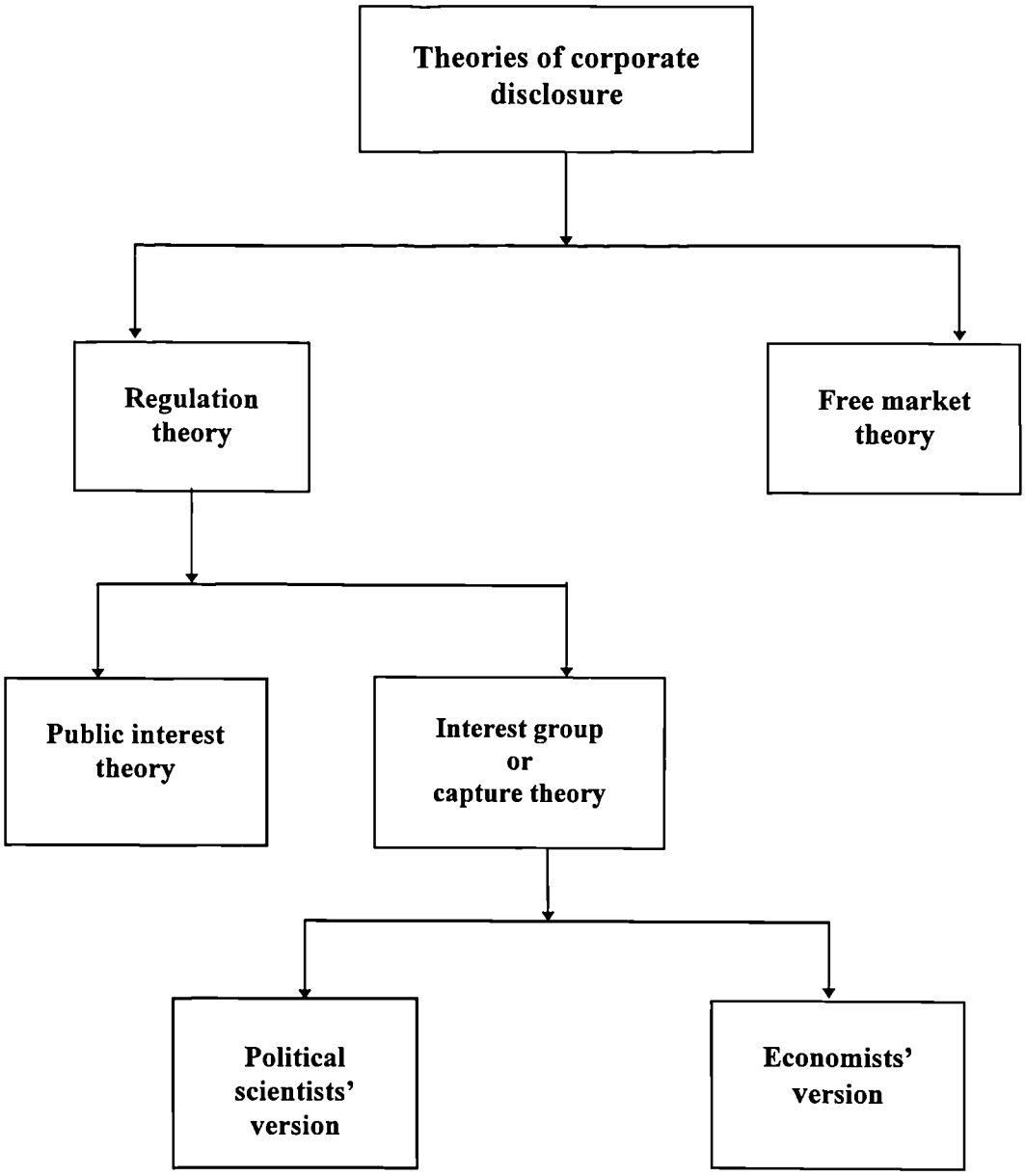

Figure 4.1: Theories of corporate disclosure

Free Market Theory

The free market theory, as the name suggests, emphasises the reliance on the invisible market forces in providing the desired accounting information. It applies economic approach to the analysis of the problems of corporate disclosure. It is non-normative in that it does not prescribe what a company should disclose in its annual report. The theory is well illustrated by Passmore (1953):

> Such a theory (a theory in social science) will have the limitations characteristic of the physical sciences. It will not tell us what we ought to do, any more than physics tells us whether to build a bridge or to be content with a ferry. (Cited in Watts and Zimmerman, 1986, p. 7)

Under the free market theory, accounting information is assumed as an *economic good*; subject to the competing forces of demand by interested users (or providers of finance) and supply by preparers (or corporate managers). It assumes further that individuals, a group of individuals, or a government have no power to appreciably influence the market for accounting information. The production of accounting information is, thus, guided by the desires of users, expressed through their willingness to buy, and by the opportunity afforded preparers to make profits. The extent of accounting information that is optimal, would be supplied in financial reports, given an equality between the costs and benefits of supplying information of that extent. Thus, the market will generate any needed information at a level consistent with the equation of marginal costs and benefits. Under this theory, companies will supply accounting information in line with the convenants contained in private lending contracts and the stewardship of managers to the owners of the companies. On the demand side, investors would bid for information relevant to their investment decisions. On the supply side, corporate managers would have strong incentives to provide adequate information that would attract investments.

Upholding this theory, its advocates have relied on the literature on the theory of the firm, property rights theory, and largely on agency theory, and on results of some empirical studies such as Stigler (1964) and Benston (1969, 1973). This section concentrates, however, only on the core concept of agency theory as applied to corporate governance, and its major implications for corporate financial reporting.

Generally, agency theory is concerned with the study of contractual relationships involving the delegation of some degree of decision making autonomy to one or more parties to a contract. Thus, agency theory is concerned about how to align principal and agent interests. Jensen and Meckling (1976, p. 308) define an agency relationship as "a contract under which one or more persons (the principal[s]) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent." There are several real life situations that lend themselves to agency-theoretic analysis. They include owner-manager, insurer-insured, client-lawyer, and patient-doctor relationships. For the present purpose, only the owner-manager contractual relationship and its financial implications are discussed. In such a relationship, the manager is viewed as the agent and the owner as the principal. The agency theory, as applied to the owner-manager relationship, views the company as a "nexus of contracts" among factors of production; each factor being a utility maximiser (Jensen and Meckling, 1976; Fama, 1980; Watts and Zimmerman, 1986). In simple terms, the company is a connected series of individual contracts through which the rights of the contracting parties are determined by law and the company's article of association. When applied to contracts between investors and corporate managers, the speculation is that companies would not be able to raise capital, or would do so on extremely unfavourable terms, unless they are willing to offer contractual terms which would enable investors to monitor their performance.

All agency relationships have two significant features. The first is the degree of decision making autonomy that the agent exercises and which affects the welfare of both the principal and the agent. The second is the differing and varying interests of both parties to the contract. These features create conflict of interests; whereby the agent acts to maximise his or her utility at the expense of the principal.

The potential for the principal to be exploited in such relationship is a recurrent theme in the literature on agency theory, and a subject of much debate between proponents and opponents of the free market approach to the production of accounting information. Jensen and Meckling (1976) have suggested several ways by which this problem can be mitigated. First, the principal can set up appropriate incentives for the agent to limit the latter's excessive behaviour. Second, the principal can expend resources to monitor the activities of the agent. Finally, the agent can undertake bonding activities either to assure the principal that he or she (the agent) will not jeopardise the principal's interests or will compensate the principal of any loss sustained by him or her because of his or her (the agent's) activities.

While appreciating the potential agency problems in publicly held companies, the advocates of the free market theory argue, however, that if the above measures fail to achieve the desired behaviour of corporate managers, there are several other means to control these problems (see Fama and Jensen, 1983a, 1983b). These measures are derived from special markets and are collectively called the *market discipline*. They seek to align the interests of corporate managers with those of shareholders. They include the market for managerial skills, market for corporate control, and the market for corporate securities. How these measures control the potential agency problems in public companies are discussed next along with one other argument used as a defence against regulation of accounting information in the literature.

Market for Managerial Skills

The first external disciplinary device for controlling the agency problems inherent in principal-agent relationships is that provided by "the market for managerial skills." The argument is, at some point in time, corporate managers are likely to

confront the discipline provided by the market for their services where their reputation matters greatly. That is, the managerial labour market, at least in the long-run, ensures that professional corporate managers are either rewarded for their good performance or penalised for their value-reducing actions. Fama (1980) discusses the discipline imposed by managerial labour market from two standpoints: within and outside the company. Between the two, the discipline imposed from outside the company appears to be best suited to this analysis. Consequently, this is discussed in detail here. It has been argued that managers' future compensation packages depend on their reputation for efficiency and honesty (Fama, 1980; Watts and Zimmerman, 1986), and as consequence, have stake in the success of their companies. It is argued further that in a well-functioning market for human capital wages reflect an unbiased estimate of the labourer's expected marginal product. In such a situation, the present value of the labourer's future wages adjusts fully to reflect his or her reputation. Since the labourer stands to suffer the consequences of his or her inefficiency through changes in the value of human capital, the labourer has the incentive to behave responsibly. Thus, the market for managerial services may, then, serve as a stronger inducement for increasing the price of securities. Indeed, both empirical (Crain 1978 in Johnson [edited] cited by Wolfson 1981, footnote 42; Coughlan and Schmidt, 1985) and anecdotal evidence support the hypothesis that inefficient and dishonest corporate managers are fired. The alternative view is also true. Thus, there is evidence to suggest that the best managers are the first to leave if a company's reward system does not measure up to their performance. In short, there is incentive for corporate managers to be truthful and efficient stewards. Hence, disclosure regulation is redundant.

Barnea, Haugen and Senbet (1981) argued, however, that there are imperfections in the market for human capital that effectively impede it from achieving the supposed

managerial discipline. They demonstrated that the practice whereby retirement compensation packages are based on manager's expected marginal product is inappropriate to safeguard a complete "*ex post* settling up." They argued further that where such practice prevails the market for managerial services may not guarantee identical principal-agent interests. They suggested that managers' retirement benefits should rather be made a function of their *ex post* marginal products.[1] They claimed that this will ensure that incompetent managers are penalised.

Market for Corporate Control

The second external disciplinary device perceived to mitigate potential agency problems of publicly held companies is that provided by the market for corporate control (take-over activities). Thus, when internal managerial control mechanisms break down, the competition in the market for corporate control disciplines management in the interest of shareholders. The market for corporate control is "an arena in which alternative management teams compete for the rights to manage corporate resources" (Jensen and Ruback, 1983). In a hostile take-over, an outside party seeks to obtain control of a target company by tendering for its voting shares. Manne (1965) demonstrated that poorly managed companies, measured by the market values of their shares, become more vulnerable to outsiders who believe they can manage the company more efficiently than the incumbent management. The argument is straightforward. Corporate managerial efficiency is assumed to correlate positively with the market price of a company's securities. A poor price performance for a sustained period of time relative to prices of competitors' stock is perceived as management incompetence. The lower the stock price, relative to what it could be with more efficient management, the

[1] This suggestion is based on the earlier conceptual analysis provided by Fama (1980, p. 296).

more attractive (or susceptible) it becomes for a take-over raid.[2] The perceived threat of a hostile take-over therefore provides an incentive for managers to act in the interests of the shareholders.

Thus far, it has been assumed that the hostile take-over scheme is an effective disciplinary device. This assumption is open to question. There are a number of possible reasons to suggest that this assumption may not hold. For simplicity, however, only four of these are discussed here.

(1) As noted, there are other factors besides management inefficiency that drive take-over raids (see footnote 2). But, for the moment, only the managerial self-interestedness and opportunism motives for take-over bids are considered. Mueller's (1969) theory of maximisation of management utility explains these managerial behavioural motives for take-over. The theory posits that take-over bids are motivated by management's desire to increase their own utility rather than those of the shareholders. Thus, managers of the bidding companies use take-overs to maximise their own self-interest which does not necessarily correspond to maximising shareholders' wealth. Management's self interests include factors such as reducing the risk of losing their jobs, increasing salary levels, preference for greater power, increased prestige, and job satisfaction. The findings by Meek and Whittington's (1975) suggest that these management's self interests are prompted by the desire for corporate growth since such growth raises management's status and benefits, and take-over activities are, in practice, the quickest and the cheapest means of growing. Some managerial theorists (for

[2] A literature review indicates that there are other forces that drive take-over activities. They include deregulation, technological and marketing synergies, economies of scale and scope, tax benefits (Jensen, 1988), less potent anti-take-over regulations, corporate re-structuring (Jarrell, Brickley and Netter, 1988), access to capital and to new markets, and management self-interestedness and opportunism (Shleifer and Vishng, 1988).

example, Mueller, 1969; Vickers and Yarrow, 1988), view take-overs as an instrument of managerial utility maximisation, undertaken for the purpose of increasing their own wealth or the prestige of managing a larger post merger entity. On the basis of the preceding conclusion, it seems reasonable to conclude that take-overs are not always triggered by managerial inefficiency. Are take-over activities in the interests of shareholders? Indeed, Firth's (1980b) study indicates that take-over activities benefit directors of the acquiring companies but harm their shareholders. This led him to conclude that mergers are most likely to be "motivated by maximisation of management utility reasons" (Firth, 1980b, p. 235). The implications of the foregoing are that efficiently run companies may also be victims of hostile take-over bids, and that the perceived connection between internal inefficiency and take-over threat may be illusive. This is not to say that all (or most) take-over raids are motivated by management self-interestedness. As indicated earlier, there might be genuine synergistic motives, among other factors, for take-over activities.

(2) It has been portrayed thus far that the managements of target companies are passive in unfriendly take-over raids. This is far from the truth. Take-overs impose significant welfare loss on corporate managers (Franks and Mayer, 1996). Managers of target companies after take-over are replaced (Walsh and Ellwood, 1991; Kennedy and Limmack, 1996). The replaced managers lose power, prestige, and the value of their company-specific human capital. As a result, they have incentives to oppose take-over bids even if shareholders of the target companies may benefit substantially from the deal. They do this by erecting barriers to hostile take-overs, thus insulating themselves from the

external discipline of the market for control at the expense of their shareholders in particular, and the efficiency of the economy as a whole. However, the effectiveness of managers to insulate themselves from hostile take-over depends on the type of defensive measure adopted. Jarrell, Brickley and Netter (1988) have broadly classified these defensive measures into two: (1) those that should be approved by shareholders, and (2) the most effective and perhaps widely used, are those that are adopted unilaterally by management without shareholders consent. The allegation that these defensive tactics are used at shareholders' expense has been criticised in the literature. For instance, Jensen and Ruback (1983) contend that management opposition may benefit shareholders of target company if their action leads to a higher take-over price.

While defensive tactics may not harm shareholders, they are, at least, effective in protecting the status quo of inefficient managers. Thus, weakening the potency of the argument that take-over activities provide a significant protection against managerial value-reducing behaviour. On this point, Scherer (1980, pp. 37-38) concluded that "seen as a whole, the available evidence provides only weak support for the hypothesis that take-overs generate an effective disciplinary mechanism against departures from profit maximisation."

(3) The results of Singh's (1975) empirical study on UK acquisitions cast considerable doubt on the efficacy of the take-over constraint on managerial performance. He examined the relationship between corporate performance of 112 companies from four manufacturing industries and the likelihood of each being taken-over. He found only relatively small differences in profitability and other measures of financial performance between take-over victims and those

that were not. This casts doubt on the perceived link between relatively poor corporate performance and take-over attempts. Singh's (1975) findings did, however, suggest that the probability of a company being taken-over varies inversely with its size.[3] He observed that above a certain level of size a company becomes immune to hostile take-over. This, in turn, suggests that one of the most effective defence against unwanted take-over is for the potential target company to seek rapid growth itself. This confirms the core proposition of Mueller's theory of maximisation of management utility. A more recent study by Franks and Mayer (1996) reports similar findings that hostile take-overs do not perform a disciplinary function.

(4) Finally, the fundamental assumption of the theory of market for corporate control is weak. Poor stock performance can be caused by a variety of factors; many of which may not reflect managerial incompetence. Other factors are likely to include general economic or industry decline, the effects of high inflation and interest rates, and other poor macro-economic policies. Hence, the causal link between a company's share value and management performance, without controlling for other confounding variables, is spurious.

Market for Corporate Securities

The third external market discipline perceived to mitigate agency problems in public companies is that provided by the market for corporate securities. Here, the stock market serves as an indirect regulator of internal efficiency of operations of listed companies. The market does this by meting out rewards and punishments in the form of

[3] Steiner (1975) noted, however, that size was not a significant factor in the case of hostile take-over. Recently, Palmer, Barber, Zhou, and Soysal (1995) also reported that large companies were less likely to be friendly acquired than were small companies in the 1960s in the US, but not in the case of hostile take-over.

cheaper and more expensive capital funds respectively. Thus, more often than not, companies solicit funds from the public on the securities market through the sale of new securities. This empowers the securities market to oversee managerial behaviour, thus, to have a successful sale, the management must be reputed as efficient. For the securities market to effectively keep managers in line, the prices of listed securities should reflect the prospective earnings and the operational efficiency of their respective companies. As noted earlier, corporate managers have financial interests in the marketing of their companies' securities, and as consequence, have incentives to signal potential and existing investors that they are efficient (Akerlof, 1970; Ross, 1979).

There is no empirical evidence refuting the claims of the perceived disciplinary control device of the securities market. In the absence of such evidence, one can only reasonably take the view that the market does, in fact, have the power to levy sanctions against inefficient companies, and that its instruments of control, though not obvious, are not any less powerful. However, the study by Amershi and Sunder (1987) calls into question the validity of this argument. Using rational expectations model, they showed analytically that, in general, even a strong efficient securities market will not necessarily lead managers to make decisions that maximise market value of their companies.

Also, relying on the theory of stock market avoidance, one may well be tempted to doubt the efficacy of the securities market in this task. Baumol (1965, pp. 74-75) demonstrated analytically that substantial number of companies deliberately avoid the direct disciplinary influences of the securities market[4], or at least evade the kind of discipline which can be imposed by the provision of funds to inefficient companies only on extremely unfavourable terms.

[4] Indeed, Welch and Neuberger (1996) observed that between 1962 and 1975, UK companies went to the stock market for cash by making equity issues, on average, once every 20 years. The situation in the US is rather gloomy. The net new equity issues since 1980 have been negative in the case of 9 out of 15 years.

Further, there is evidence to suggest that the securities market may not efficiently ensure truthful voluntary disclosure of information. Recently, Rajan and Sarath (1996) have suggested analytically that in competitive market companies reveal, but not all of, value relevant information held by them. Given the flexibility in the choice of accounting techniques used to report particular event and the inclination of management towards the presentation of a "desired" picture of their company, the accounting information released voluntarily may not guarantee truthfulness. In such environment, the tendency for corporate managers to report only what seems good for them or what create good impression is more likely to be high.

Related to the above is the problem of compromising the comparability quality of financial statements. This may occur as corporate disclosure practices vary between companies (and within a company over time) in an attempt to reduce agency costs. The purpose of disclosure in an unregulated economy is to reduce agency costs which vary in amount and in character from one company to another (Watts, 1977). Agency costs may depend on the financing structure of a particular company. It follows that there will be no uniform financial reporting system. Peasnell (1982, p. 251) argued, however, that this may not be a problem as comparability may not be desired by users of financial statements. He supported this by saying that disclosure practices may be an equilibrium set of devices tended to lessen agency costs in the various contracts between the reporting entities and shareholders and bondholders.

Efficient Market Hypothesis

Another defence for the free market theory of the production of accounting information is derived from the semi-strong form of the EMH. The EMH is discussed within the framework presented in Fama's (1970) review article. The EMH maintains

that prices of securities fully incorporate all material, available information on those securities. Further, any new information is speedily impounded in those prices and in an unbiased manner. If the EMH is true, it means that the market prices of securities will always equal the intrinsic values of those securities, or that, if market and intrinsic prices are not equal, then the difference between them is significantly small so that, given transaction costs, this difference can not be exploited profitably. In short, if the EMH is valid, securities markets will be in *continuous stochastic equilibrium.* This, as noted above, means that security prices always equal their intrinsic values. Any change in intrinsic values will be fully reflected immediately in market prices. But the only thing that would cause intrinsic values to change would be a new information: if there is no new information about a particular security, the intrinsic values should not be expected to change. Therefore, returns on securities are expected to change in response to new information; the amount and the direction of which are unpredictable.

Fama defined the EMH in terms of *fair game* expected return models. A fair game is one in which there is no systematic difference between the actual return on the game, and the expected return before the game is played. In the context of securities market, it is a fair game if there is no systematic difference between the actual and the expected returns on securities. Fama (1970) summarised it in mathematical form as:

$$Z_{j,t+1} = R_{j,t+1} - E(R_{j,t+1} \mid Info_t) \qquad (4.1)$$

$$E(Z_{j,t+1} \mid Info_t) = 0$$

where,

$R_{j,t+1}$	=	the observed return of security *j* in period *t+1*, that is the percentage change in security price adjusted for dividends received;
$E(R_{j,t+1} \mid Info_t)$	=	the predicted return of security *j* in period *t+1*, given the current information set, $Info_t$;
$Info_t$	=	the information set assumed to be fully reflected in prices in period *t*; and

$Z_{j,t+1}$	=	the excess return for security *j* in period *t+1*: the difference between the observed return, $R_{j,t+1}$, and the predicted return given the information set, $Info_t$.

Since Equation 4.1 is a fair game, on average, over a large sample of observations, the unconditional expectation of $Z_{j,t+1}$ is zero. Also, its serial covariance is zero (thus, observations of a 'fair game' variable are linearly independent). However, in the real world, the expected value of $Z_{j,t+1}$ can either be positive or negative depending on the security's relative risk.

Fama categorised the EMH into three: the weak, the semi-strong and the strong form; on the basis of the *level of information* being considered. The weak form of the EMH states that the current equilibrium security price fully reflects all information contained in its historical prices. The semi-strong form extends to include all publicly available information, while the strong form adds inside information. Among the forms, the semi-strong form appears particularly relevant to this study because the information contained in a company's annual report or prospectus is part of the publicly available information set. Consequently, this form is discussed further in the next paragraph.

Briefly, the semi-strong form of the EMH maintains that the market equilibrium prices of securities adjust rapidly (and correctly) on the release of all material, publicly available information (Fama, 1970). Thus, under the semi-strong form, current securities prices reflect not only market-related data such as historical prices and trading volumes, but also company-specific information, general economic, and political news.

Commenting on the speed at which securities prices impound the release of new items of information to the market, Wolfson (1981, p. 130) states that "the efficient market is an astoundingly rapid collector of and responder to bits and pieces of information about a company." This implies that information contained in, say,

corporate annual (or quarterly) reports leads to significant price changes following public release of such report. Good news lead to a rise in prices and bad news lead to a fall in prices, but once this has happened no further predictable price changes can be expected. If the EMH in its semi-strong form is valid, then no trading rule based on the public information should lead to excess returns (after adjusting for risk and transaction costs) as security prices would have either responded too quickly to the information contained in corporate reports and announcements, leaving no further predictable price changes to be exploited or not responded at all, because they (the corporate report and announcements) contained no relevant information. Indeed, empirical evidence suggests that most securities markets in developed economies are semi-strong-form efficient (see, for example, Ball and Brown, 1968; Beaver, 1968; Fama et al., 1969; May, 1971; Brown and Kennelly, 1972; Verrecchia, 1980; Schwert, 1981). It follows that investors on these markets are "price protected" as they buy shares at fair prices in the sense that, on average, they earn a normal return. Securities prices, therefore, provide accurate signals for optimal resource allocation. Hence, regulating corporate financial disclosure is superfluous.

However, this defence has not been left unchallenged. First, the research designs and other statistical issues of empirical studies supporting the EMH have become a subject of much controversy and have evoked a number of criticisms. Although the conceptual analyses within these studies are intuitively appealing, their empirical tests lack rigour and often their theoretical bases are either vague or ad hoc. For instance, Ricks (1982) noted several significant deficiencies in the research designs and methodologies employed in these studies. He also found that the studies are ill-grounded in theory. There is a good reason to expect this result because empirical works in this area preceded the theory rather, and not the other way round. Fama (1970)

acknowledged this historical evolution. In addition, Ricks discovered a series of related problems, each of which has the potential to affect the internal validity of these studies. They include omitted variables, self-selection bias, confounding events, industry effects, and wrong choice of events dates (see also Foster, 1980 and Beaver, 1989, pp. 142-147 for detailed discussion of these limitations). Furthermore, most of these studies relied largely on the NYSE and the LSE; the findings of which can not be generalised to other stock markets, especially those in emerging economies. Second, the findings of several other studies cast doubt on the strength of the relationship between public information and stock market activity. Generally, the evidence of the causal link between public information and market activity is weak (see Schwert, 1981; Damodaran 1989). The plausible explanation for the weak evidence is either the shared joint patterns were a mere coincidence or the models used in these studies were wrongly specified.

Third, the EMH has been criticised for imprecise operational definitions (see, for example, Downes and Dyckman, 1973; Beaver, 1981). Downes and Dyckman (1973) criticised the EMH's general assumption of identical distributions of expectations.[5] They argued that, though, the aggregate actions of individuals determine market behaviour, the process of aggregation is often deceptive. They explained that, in most cases, what is true of a group as a whole, may not be true of any individual comprising that group and the reverse is true. The implications of the universal knowledge

[5] As defined in the finance literature, market efficiency with respect to an information item means that prices act as if everyone knows that information. For example, market efficiency with respect to say, a change in stocks valuation method for annual report purposes means that the market prices act as if there is universal knowledge of the change in accounting methods. Even though the universal knowledge condition may not hold practically, the EMH states that prices act as if it holds. In short, the EMH assumes identical or homogeneous expectation of information about distribution of returns among market participants. This occurs whether the market fully aggregates or only averages information. It is fully aggregating information, even if an item of information held only by a single individual, is fully reflected in security prices as though every other participant in the market is fully aware of this information. On the other hand, in a market that is averaging information, security prices only reflect the average impact of different items of information. This is because not every individual is equally well informed and the response of security prices to new item of information depends on the balance of 'informed' and 'uninformed' investors. The semi-strong form efficient market requires only that the market averages information. While, the strong-form efficient market requires information to be fully aggregating.

assumption make the market inefficient. Fama (1970), in contrast, perceives this assumption not as a necessary but potential source of market inefficiency.

Abdel-khalik (1972) has also argued that market equilibrium price, though implies optimality, does not guarantee optimal decisions on the part of market participants because such decisions are based on future expectations.

Whittington (1993, p. 313) added that the EMH implies informational efficiency, and not fundamental efficiency. That is, the EMH does not refer to the market's ability to assess a company's future cash flows and its performance which are fundamental to a nation's economy. The market can serve as an effective resource allocator only if securities are valued in terms of the prospective earnings of the company concerned.

Fourth, the fair game model makes no assumptions about the generation of the optimal information. As was pointed out by Belkaoui (1987), the EMH and its supporting empirical evidence are salient about the "optimal" amount of information. This point was forcefully argued in SEC's *Sommer Report*:

> The 'efficient market hypothesis' - which asserts that the current price of a security reflects all publicly available information - even if valid, does not negate the necessity of a mandatory disclosure system. This theory is concerned with how the market reacts to disclosed information and is salient as to the optimum amount of information required or whether that optimum should be achieved on a mandatory or voluntary basis; market forces alone are insufficient to cause all material information to be disclosed. (Cited by Belkaoui, 1987, p. 336)

Critics have argued that regulating corporate disclosure does not countervail the semi-strong form of the EMH. It rather strengthens the semi-strong form of the EMH as the fair game model implies nothing about information production (or supply). Gonedes (1975) noted that there is nothing in the efficient capital market model that provides theoretical insights into the nature of the process by which information becomes available. Mandatory disclosure rules ensure the availability of adequate corporate-

specific information. In addition, it fills in the gap between information that investors desire and what companies voluntarily provide. Investors are, then, assured of more timely, accurate information on the intrinsic value of securities. Regulation affords them protection from misleading and insufficient information. This, in turn, reduces the scale of fraudulent, manipulative, and speculative practices in stock markets.

Regulatory Theories

Wilson (1984) has defined regulation, in a general sense, as "administratively made rules with the force of law and backed by sanctions." However, as pointed out by Pegrum (1965), the term regulation is frequently used, but in different contexts. This has, unfortunately, lead to it acquiring a bewildering variety of meanings. According to Pegrum, the term regulation has three meanings. First, it is used in a generic sense to mean any form of behavioural control. The second meaning arises from legislative actions designed to limit the freedom of activity of business enterprise. They are meant to control the imperfection of the free market system and the failure of economic forces in achieving social objectives. Wilson (1984) refers to this type as social regulation. The third, and the narrowest meaning of regulation, arises from controls imposed on monopolistic industries; such as those in transport, communication and public utilities. Usually, they take the form of fixing minimum prices, limiting profits and restraining discrimination.

Applying the above classification, disclosure as a means of securities regulation (Mundhiem, 1964), can be viewed as a social regulation.[6] Generally, its purpose is to correct the perceived deficiencies of the free market system in fulfilling public interest

[6] It is so regarded for the purposes of this study. Another reason is that the first taxonomy is too broad, and the third is outside the scope of accounting. The second relates to control of corporate behaviour (of which financial accounting and disclosure are a part).

goals in securities dealings, and even to oil the engine of a perfectly functioning free market system. For the present purpose, however, the concept is narrowed further to mean any measure aimed at controlling the imperfections in the market for corporate information.

What is the importance of accounting information that stock markets mandate its content, form, and timing of disclosure? Enthoven (1981) suggests that accounting information shapes the climate of capital formation by performing two major functions in capital markets. First, it generates confidence in corporate operations, and by so doing, stimulates the flow of capital funds. It gives accurate financial description of the performance and potentialities of listed companies, thereby enabling investors to make sound investment decisions. Second, it helps to ensure the continued efficient use of the invested capital. The overall objective is to make the market efficient for optimal resource allocation.

As indicated earlier, there are two major categories of regulatory theories of a given industry: (1) the public interest theory; and (2) the interest-group or "capture" theory. Each of these theories is considered in the sections following.

Public Interest Theory

The public interest theory postulates that "regulation is supplied in the interest of the public for the correction of inefficient (or inequitable) free market system" (Posner, 1974). It is based on the assumption that, if left alone, the free market system will be inefficient in distributing wealth equitably. In the financial markets, the free market system is regarded as being readily susceptible to fraud, manipulation, and deception. The theory assumes further that regulation is cost effective. The public interest theory suggests that regulation is concerned with the advancement of social welfare. Social

welfare is attained, in a Pareto sense, if prices of inputs and outputs are equal to their social marginal costs.

In this context, the public interest theory views regulation as more efficient than the free market system in enhancing social welfare. When applied to financial reporting, it implies that the needs of users of corporate reports is best served if information in them is mandated. Thus, regulating the disclosure of corporate information would provide important social benefit. However, whether this actually leads to the maximisation of social welfare has been a subject of much debate. While Ronen (1979) subscribes to the view that regulating the disclosure of information enhances social welfare, he argues, however, that regulation should be more concerned with the efficient allocation of scarce resources.

Several arguments have been advanced in support of the public interest theory of corporate disclosure requirements of stock markets. Beaver (1989) listed the following: (1) the existence of inadequate incentives to disclose information, (2) unequal possession of information and (3) motivation to suppress unfavourable information in an unregulated environment. Each of these is discussed in the following sections.

Existence of inadequate incentives to disclose information

Market failure and financial reporting

According to Lipsey (1989, p. 399) the term market failure describes "any market performance that is judged to be less good than the best possible performance." It is normally used in somewhat two different senses. The first relates to the failure of the market system to achieve efficiency in the allocation of scare resources. The second is the failure of the market system to serve social goals.

There are two sources of market failure in achieving efficiency in the allocation of scare resources: (1) those that cause non-optimal production of goods and services, and (2) those that cause goods and services to be produced but at higher costs than they would have been necessary. These two sources of market failure are discussed here in relation to financial reporting.

Financial reporting and public goods

The most dramatic form of market failure, within the category of efficiency, concerns goods that would not be produced at all under a market system. There are certain goods and services which, once produced, can be consumed by everyone in the society. Such goods are called *public goods* (or collective consumption goods). The key physical characteristic of a public good is the non-excludability of users who have not paid for it. Others benefit whether or not they contribute to the costs of producing the good, in part because the consumption of it by one user does not diminish its availability to others. This presents a problem of preference revelation. Thus, others can "free ride" and have no incentive to honestly reveal their preference as a means of avoiding the assessment of their share of the costs. They may even understate their desire for it, though, they may consider the good to be valuable and would be willing to pay for it in the open market if they were unable to free ride. In other words, the market system can not compel payment for a public good since there is no way to prevent a person who refuses to pay for the good from consuming it. As a consequence, private, profit-seeking companies will thus fail to produce public goods at the optimum level.

In the context of financial reporting, information in published corporate reports has the attributes of a public good (Gonedes and Dopuch, 1974). The conventional view

that disclosed information is a public good has explicitly been stated by Demski and Feltham (1976, p. 209) as follows:

> Unlike pretzels and automobiles, (*published information*) is not necessarily destroyed or even altered through private consumption by one individual . . . . This characteristic may induce market failure.
>
> In particular, if those who do not pay for information cannot be excluded from using it and if the information is valuable to these "free riders," then information is a public good. That is, under these circumstances, production of information by any single individual or firm will costlessly make that information available to all . . . . Hence, a more collective approach to production may be desirable. (Emphasis mine)

Watts and Zimmerman (1986, p. 164) disagreed, however, with the view that disclosed information is a public good. They argued that it has both the features of public and private good because its use by one investor reduces the chances of others to derive the same benefit from its further use as market prices would have already been adjusted by the first usage.[7] Suter (1989), while disagreeing with Watts and Zimmerman (1986), argued that the private good aspect does not undermine the market failure rationale of regulation. In defence, he stated that it is cost effective for an issuing company to produce information about itself than will information intermediaries. Nevertheless, for the present analysis, accounting information is assumed to be a public good.

In this sense, the market failure comes about, if, either the disclosing company is not able to and can not exclude non-shareholders from using the disclosed information or can not perfectly price discriminate among the investing public. According to Gonedes and Dopuch (1974), corporate managers are unable to exclude non-shareholders from using information in published corporate reports.

[7] Information in the market does not, in fact, circulate as rapidly as the EMH contends. On the contrary, there is a slow permeation of information to different groups of the investing public and that the financial analyst and the investor who acts fast enough can take advantage of them.

Thus, potential investors as well as other users of corporate reports including academics benefit from accounting information as it becomes public. Consequently, the direct demand for corporate reports and the incentive to pay for it may be zero (Beaver, 1989). Companies may not (or do not) take the value of the information to non-shareholders into consideration when determining the quantity and quality of information to produce (private benefits are less than social benefits). Companies, therefore, in an unregulated environment, under-produce accounting information.

Financial reporting externalities

The second major source of market failure under the general category of efficiency stems from what are called *externalities*. When these occur, some quantities of the goods in question will be produced but at a higher cost than would have been necessary. The term "externality" has been explained in several different ways in the economics literature. Externality is said to exist when the quantity or quality of goods and services produced in a free market economy differs from the supposed social optimum level (Watts and Zimmerman, 1986). The social optimum output level is attained when prices of goods and services in an economy are equal to the marginal social costs of their production (Lipsey, 1989). At this output level, social welfare is said to have been maximised. At an individual level, utility is maximised when private marginal benefits equate private marginal costs. The term "externality" is generally applied to the difference between social cost and private cost or between social benefit and private benefit. The differences may result either in external diseconomies or economies to third parties respectively.

Using the usual pollution problem as an illustration: consider a factory manufacturing a product called *X*. The process of producing *X* involves the emission of

fumes to a nearby residential area. The residents in order to enjoy good quality air have to install purification devices, indoor-clothes dryers and other means of reducing the effect of the smoke. The residents' costs of controlling the effects of the fumes will not be incorporated in the production costs of the factory. In such circumstances, the private costs of producing X are less than its social costs. The excess of the latter over the former is called the *external diseconomies* in the economics literature If, in a free market system, private costs are less than social costs of producing a good, more of it will be produced beyond the socially optimum level. Conversely, if private benefits are less than social benefits, too little will be produced relative to the social optimum level.

In another sense, an externality is said to exist when the actions, whether a production or a consumption activity of one party have effects on the utility functions, a consumption set or a production set, of other parties who are not compensated through the market system. Again, using the well-known case of the apple farmer and bee keeper as an illustration. Consider that both own neighbouring lands. Since bees are imperfectly controllable, they usually fly to the adjacent land to enjoy the apples' nectar. This action also results in the pollination of the apples; resulting in a bumper harvest to the apple farmer with no less honey output also to the beekeeper. Unfortunately, the accounting information systems of both farmers do not capture the benefits each derives from the bees' activity, and therefore ignore them in making output and pricing decisions. Consequently, the costs and benefits of both honey and apples are under-reported. In such situations, neither of them has private incentive to internalise the effects on each other in his or her production (or consumption) function. Thus, in the presence of externality, a market system fails to assign adequate prices to certain inputs. Or, alternatively, it fails to generate outputs at the level where their prices fully reflect the existing costs and benefits produced. This constitutes a form of market failure. This

could be corrected, either by a collective action or a social welfare maximising dictator, by moving the private output closer to the social optimum level. Externalities, whether adverse or beneficial, "cause market failure because they lead to allocations of resources that are non-optimal from society's point of view" (Lipsey, 1989).

In the context of financial reporting, externality occurs when the release of accounting information by one company conveys information of (or to) others in the same industry (Beaver, 1989). The costs of the disclosure will ultimately be paid for by the shareholders of the disclosing company but not those of the other companies, though they are affected by the disclosure. Beaver (1989, p. 181) illustrates this:

> . . . disclosure by a firm about its success (or lack thereof) with respect to *say* some product development may provide information to other firms about their chances of success in similar product developments. In fact, it might even obviate their having to expend resources on product developments. (Emphasis mine)

In such circumstances, there will be a lack of incentive to fully disclose as the disclosing company will not be compensated through the market system. This consequently gives rise to market failure of accounting information as disclosure is below the social optimum level.

The validity of the market failure argument justifying disclosure regulation has been challenged in the literature. For instance, Beaver (1989) has expressed reservation about or of its use. He argued that, like many goods and services, the demand for accounting information is a derived demand (needed for investment purposes), yet no externality (or market failure) has been alleged. He remarks:

> . . . to induce an eternality or market failure, there must be something in the complexity or indirectness of the structure that produces effects or consequences that are not adequately reflected by or incorporated into the price mechanism. (Beaver, 1989, p. 182)

Furthermore, Leftwich (1980) has condemned it as fundamentally flawed and devoid of policy implications. Leftwich's challenge is the most poignant attack on the market failure theories as they apply to accounting information. He argued:

> The output identified by those theories as optimal is optimal in name only - it is defined independently of any institutional arrangements that can produce the output. None of these theories identifies a level of output which is optimal *given* the existing technology of markets, regulation, or any other regimes. Thus, unless market failure theories incorporate attainable institutional arrangements, they can yield no policy implications. It is illogical to condemn the actual output of an existing market (or government agency) merely because the quantity or quality of that output differs from an unattainable norm that is falsely described as optimal. (Leftwich, 1980, p. 208 [Italics in original])

Apart from the above, it is unclear what is meant by "social welfare", nor is there any agreed means of "maximising" it. The attempt to understand the nature of social welfare has long generated controversy among welfare economists. In fact, this led Arrow (1951) to conclude that no rational method of maximising social welfare can possibly be found unless strong restrictions are imposed on individuals' preference orderings. Furthermore, even if social welfare could be defined (or identified) and methods of maximising it could be agreed upon, what guarantee is there that its advocates would be motivated to maximise it? Human beings are naturally self-centred. They carry out social functions primarily as a means of achieving their own private ends: the enjoyment of income, prestige and power.

Unequal possession of information

The second major argument justifying disclosure regulation is that of the unfairness of the unequal possession of information among market participants. That is, if left unregulated, the market system will give rise to a situation where some individuals will have access to private information (or private information production

opportunities), while others would not. This is what is commonly called *information asymmetry* in the finance literature. Information asymmetry is of two main types: (1) investor-investor asymmetry, and (2) outsider investor-insider manager asymmetry. For the present purposes, however, the discussion is focused only on the latter. The unequal possession of information argument is primarily based on the principles of equity and fairness. Beaver (1989) puts this in simple terms as: "it is only fair that the less informed be protected from the more informed." He has also criticised the practice of accessing and using inside information by corporate managers at the expense of outsider investors as inherently unfair. Ludman (1986) earlier condemned the practice as unethical. He contended that corporate managers are in position of trust and to trade on non-public corporate information derived from their roles as stewards violates their fiduciary responsibilities.

The argument is often couched in fairness terms, Hirshleifer (1971) and Fama and Laffer (1971) have, however, criticised it on efficiency grounds. They hypothesised that, in a pure exchange setting, the social value of privately acquired information is zero, though it may have considerable private benefits, and that any resource expended in acquiring and disseminating such information is socially wasteful as it does not lead to any improvement in production. In another study, Grossman (1976) demonstrated that informationally efficient market system eliminates private incentive for individuals to collect information. Grossman claimed that the market system perfectly aggregates diverse information, and in doing so removes private incentives to collect information. This implies that, a possible way of reducing socially valueless private information production may be to produce information publicly. Thus, as noted by Marshall (1974), this provides yet another rationale to mandate that certain information be made public.

The information asymmetry argument assumes that the less informed investors will react passively to price signals. In fact, the less informed investors can protect themselves from trading with the more informed investors in several ways. One such alternative is to refuse to trade with the more informed individuals. Or adopt a passive buy-and-hold portfolio strategy. This will minimise trading and thereby reduce the ability of the more informed benefiting from their privately held information via abnormal returns. Second, the less informed can infer some (and in some cases all) the information of the more informed investors from market prices. In other words, market prices will reflect the actions of more informed investors (Grossman, 1976; Grossman and Stiglitz, 1980). Finally, the less informed investors can obtain the information held privately by the more informed investors by hiring the services of information intermediaries either directly or through a financial intermediary. Practically, this may not be feasible as the share holdings of many individual investors are small, and conceivably, it may not be cost effective.

Suppression of unfavourable information by management

The third major justification for disclosure regulation is that management have incentive to suppress unfavourable information. Though this argument arises from the information asymmetry problem just alluded to, it is, however, quite different. It is concerned with the behaviour of companies in situations in which information asymmetries exist. Thus, in the capital markets where two groups interact and where one group, usually comprising outside investors, is imperfectly informed about the quality of products being marketed by the other, inside group (typically the corporate managers). The insiders, on the other hand, have either superior information about the product or at least more information than is available. Simply put, there is an

information asymmetry between the insiders and the outsiders. In the absence of further information, this situation can cause the market to break down or even disappear altogether.

Akerlof (1970) provided a classic example of the effect of this information asymmetry in a general market setting. He used products "lemons" (American jargon for inferior products) and good cars in the automobile market to illustrate and develop his point. The reasoning of his original paper is as follows. Consider a market in which informed sellers offer products of different quality to buyers who while being aware of the differences in quality of the products are unable to distinguish between them in terms of their qualities. Granted these conditions, the prices offered for these products reflect only their average quality. If sellers of the products have prices below which they will not sell their products, then, initially, sellers of the highest quality products may withdraw their products from the market. This will reduce the average quality of products on the market and as result buyers will bid down prices. Sellers of the next highest quality products may also withdraw their products from the market. This process will continue until only the poorest quality products are marketed or the market disappears altogether.

A literature review, however, indicates that sellers of the high quality products can respond to this problem in a number of ways. First, given that the sellers are better informed than buyers, there will be an incentive on the part of the sellers to *signal* the quality of their products. An alternative way of viewing this is to say that buyers will have an incentive to sort (or *screen*) sellers of different quality products. Though, signalling and screening devices are alternative ways of viewing the same phenomenon, they all involve the so-called *self-selection principle*. Essentially, this means that sellers choose courses of action that vary systematically with the quality of their products. If

sellers repeat their actions and buyers observe those actions, the buyer would learn something about the product quality of each individual seller. However, the effectiveness of the self-selection procedure depends on the relative ease by which the sellers of lower quality products can imitate the actions of the sellers of higher quality products. Thus, it should be non-optimal for the lower quality products sellers to imitate the high quality products sellers. Also, the costs of signalling must vary inversely with the degree of quality. Stated differently, signalling must be a costly activity with no rewards beyond those of signalling. In addition, the quality must be confirmable with actual product quality observed after purchase.

Second, the high quality products sellers can offer warranties to buyers whereby they will incur pecuniary penalties if it is found later that the product offered was sub-standard. Warranty contracts are not costless either. The high quality sellers may end up bearing "excessive" risk (Beaver, 1989).

In the context of the securities market, there is uncertainty about the quality of securities.[8] For instance, a company that raises equity finance may subsequently go bust, with equity holders receiving nothing. There is also a cost of being perceived as a "lemon" such as paying higher interest rates on debts or offering equity issues that raise less money (due to under subscription). Given the uncertainty about securities quality and the cost of being perceived as a "lemon," companies have incentive to *signal* the quality of their securities by altering the initial information asymmetry. One way management can do this is to provide much quality information in their prospectuses or

[8] Cooper and Keim (1983) have cautioned the likening of Akerlof's "lemons" analysis to corporate information. They argued that the two are significantly different. They supported this by saying that the market for "lemons" argument assumes that the commodities in question are heterogeneous whereas corporate securities are homogeneous. This implies that, the sale of one "lemon" may not affect the prices of other cars in the showroom, provided the car dealer does not sell more "lemons," in that the sale of one bad car does not necessarily imply that all other cars in the showroom are also defective. However, in the case of corporate securities, if the deception of one investor becomes public, the price of all securities of that company will be affected. This is because securities are a homogeneous product, though there may be different classes of it.

annual reports. But, in an unregulated environment, this is less likely to be forthcoming. Or if disclosed, it may be biased towards "good news" (see Penman, 1980 in relation with earnings forecast). The disclosure of minimum information needs to be mandated.

However, recent studies on voluntary disclosure (for example, Grossman, 1981; Verrecchia, 1983; Dye, 1985a; Wagenhofer, 1990; Skinner, 1994) cast doubt on the strength of this justification of disclosure regulation.[9] For instance, Skinner (1994) hypothesises that, given, the likelihood of potentially costly shareholder lawsuits and the penalty imposed on companies' reputation by the investment community, corporate managers often seek to weaken this response to the release of bad news on mandated release dates by volunteering the information prior to those dates. On the legal-liability argument, he contends that early disclosure of bad news by companies undercut plaintiff allegations that the managers failed to disclose promptly. He elaborates further that the shorter the non-disclosure period, the smaller the number of plaintiffs in a class action in suit as will also be the expected costs of the suit. As only actual losers (whose number may largely be influenced by the period of non-disclosure) can rightfully sue. On the reputational-penalty argument, Skinner demonstrates with an example from the financial press which suggests that professional money managers, security analysts and other investors impose costs on companies whose managers have a reputation for withholding bad news. Such companies are less likely to be followed by analysts and money managers, thus reducing the price and/or liquidity of their companies' stocks. Using 93 US companies within the National Association of Security Dealers Automated Quotation System-National Market System (NASDAQ-NMS), Skinner (1994) presents empirical evidence consistent with the legal-liability and reputational-penalty

[9] See, also Benston (1969) and Foster (1986, pp. 30-31) for more comprehensive evidence on voluntary disclosure prior to regulatory mandates by companies in the US, the UK and Australia. Further, see Morris (1984) for evidence on the extent to which voluntary disclosure practices have been codified by regulatory bodies in Australia.

hypotheses. Yet in another study, Wagenhofer (1990) presents evidence to suggest that managers may disclose bad news to discourage entry.

Interest Group or 'Capture' Theory

This theory explicitly challenges the main assumptions underlying the public interest theory for it maintains that regulation supplied, supposedly, in response to public demand is used by its seekers (the regulator or the regulated industry) to maximise their own welfare. An in-depth understanding of the capture theory of regulation can be gained from Mitnick's (1980) definition:

> . . . if the regulated interest *controls* the regulation and the regulated agency; or if the regulated parties succeed in *co-ordinating* the regulatory body's activities with their activities so that their private interest is satisfied; or if the regulated party somehow manages to neutralise or ensure *non performance* (or mediocre performance) by the regulatory body; or if in a subtle process of interaction with the regulators the regulated party succeeds (perhaps not even deliberately) in *coopting* the regulators into seeing things from giving them the regulation they want; or if, quite independently of the formal or conscious desires of either the regulators or the regulated parties the basic structure of the *reward system* leads neither venal nor incompetent regulators inevitably to a community of interests with the regulated party. (Cited by Walker, 1987, pp. 281-282 [Italics in original])

Though the above definition looks at capture theory comprehensively, it is generally of two distinct forms: (1) the political science version, and (2) the economic version. The political science version emphasises the importance of interest groups in public policy formulation. This version of the capture theory posits that regulatory agencies, though created to pursue public interest goals, later come under the dominant influence of (are captured by) the industries being regulated. Thus, the regulatory activities tend to serve only the private interests of politically active groups. Is there any evidence that regulatory agencies have been captured by the industries they were created to regulate? Yes, of course, opponents of this version have provided evidence in

support of their claim. For instance, Benston (1985) alleged that various interest groups (that is, legislators, academics, journalists and public interest advocates) other than the US accountancy professional body (American Institute of Certified Public Accountants [AICPA]) were amply rewarded for lobbying for regulation of public accounting. On the basis of this he concluded that "the legislators have had publicity, journalists have gotten copy, academicians received data and the opportunity of writing papers like this, and some public interest activists have had a shot at authority" (Benston, 1985, p. 74)

Posner (1974) has criticised the political science version of the capture theory as entirely devoid of "theory." He stated that "while [I] have generously called it a 'theory' it is actually a hypothesis that lacks . . . theoretical foundation." He added further that the political science version of capture theory "is confusingly similar to, and in practice probably indistinguishable from . . . the public interest theory . . . ."

Some economists (for example, Stigler, 1971; Posner, 1974; Peltzman, 1976) expressed dis-satisfaction with the political science version and proposed an alternative which became known in the literature as the *economic* theory of regulation. This economic version of capture theory is concerned with the determinants of the supply of, and demand for regulatory activities. Thus, it is an extended notion of market behaviour expressed through the political system. It focuses on the income distribution consequences of regulatory processes and the incentives faced by the regulators themselves. It is non-normative as it seeks to explain why and how a particular form of regulation emerges and how net gains or losses have been distributed among the interest groups involved. The central thesis of this version, as stated in Stigler's (1971) paper is that "regulation is acquired by the industry and is designed and operated primarily for its benefits." Thus, this version stipulates that regulation is granted to those who seek it; whose prime motive is to capture the state's regulatory apparatus to achieve wealth

transfer. It is assumed that individuals, legislators, regulators have incentives to employ the powers of the state to make themselves better off and to coalesce for that purpose. One way of achieving this, as suggested by Watts and Zimmerman (1986), is by legislation that seeks to redistribute wealth favourable to them.

Under this concept, regulatory rules are the results of two competing forces (that is, those who receive the benefits and those who provide the benefits) and equilibrating.[10] Thus, the regulation is explained by economic incentive on the part of legislators (and regulators) and the soliciting group since both parties expect to benefit from it. Following this line of thought, Baxter (1970) argued that the NYSE's imposition of fixed commission structure has benefited no one other than its member companies. It has enabled them to earn monopoly rents. He argued further that conducting trading on fixed non-competitive commission rates is manifestly inconsistent with efficiency objectives. It widens the gap between brokerage compensation and cost. It increases transaction costs especially to small investors, thereby reducing the flow of investible funds to entrepreneurs. Lev (1988) also alleged that regulation serves as an avenue for legislators and regulators to increase their economic power (that is, to re-distribute wealth favourably to themselves). These allegations are hard to prove or disprove. However, the study by Schwert (1977), though not a direct test of any of these allegations, does not lend credence to any of them. Schwert (1977) empirically examined the changes in brokers' profits following important changes in public regulation. Using time series information on the market prices of stock exchange seats as proxy, Schwert measured directly the impact of regulatory changes on the long-run profitability of stock exchange members. He found no evidence supporting the existence of a capture theory of regulation in the US.

[10] In the context of financial reporting, the content and form of financial statements are the equilibrium outcomes of individuals maximising their own self-interests.

However, there was significant evidence to suggest that the expected profitability of NYSE and the American Stock Exchange membership had permanently been reduced following the introduction of the US Securities Act of 1934.

The weakness of the economics version of the capture theory, as pointed out by Watts and Zimmerman (1986, p. 238) is that, it is unable to specify the nature (or form) of the wealth transfer. Williams (1976) has also criticised the capture theory as being inconsistent with reality. He argued analytically that the theory is based on a questionable implicit assumption of homogeneity of the regulated interests as to what constitute acceptable forms of, and limits to, regulation. The theory pre-supposes identity of interests among the regulated. Williams denied this by citing the oil and gas, rail and road transports, and conventional and cable television industries (all regulated in the US) as having divergent and antagonistic interests. He, therefore, concluded that "the brief selection of agency activities offered suggests that simple notions of agency capture are, if not false, subject to serious qualification." He went on to argue further that "public interest" like many other terms such as "democracy" and "freedom", is a porous concept which is susceptible to a variety of different plausible interpretations which does little to clarify the problems of regulation. Williams' identity of interest argument remains controversial.

Implications of Corporate Disclosure Regulation for Securities Markets

The arguments justifying disclosure regulation have a number of policy implications for securities markets. These policy goals are often targeted by corporate financial disclosure regulations. They include the following: (1) to protect investors (Stigler, 1964; Benston, 1969; Kripke, 1977; Jarrell, 1981; Meir-Schatz, 1986a); (2) to promote fair dealing in securities (Benston, 1969); (3) to provide investors with valuable

information to make investment decisions (Benston, 1969, 1973); (4) to improve the economic functioning of capital markets so as to achieve better resource allocation (Benston 1973; Kirpke, 1977); and (5) to preserve public confidence in the capital markets (Benston, 1973). They are examined in detail as follows.

Protection of Investors

Although there is no general consensus as to the precise meaning of the investor protection objective, the most common definition states that investor protection aims at the deterrence of fraud and mis-representation in financial statements. Wilcox (1955) provides insight into this issue when she states:

> The maintenance of competition protects the community against the evils of monopoly. But it affords no protection against the harm that may be done by competitors. Competing sellers and competing buyers may not be equally well informed, and those who possess *information may take* advantage of those who lack it . . . . Government is therefore concerned, not only with the preservation of competition, but also with the ways in which men compete. So laws have been enacted to equip traders with accurate information. (Cited in Jarrell, 1981, p. 613)

In this regard, companies are required to disclose certain information in their prospectuses whenever they invite the public to subscribe to *their shares*, and periodically in their annual reports to their shareholders and other interested parties. This requirement seeks to prevent or reduce corporate fraud and misleading representations and the withholding of information concerning corporate activities, results or position. It calls for a "full" disclosure of accounting data which require the presentation of all material and relevant facts relating to the company's financial position and its operations. It also calls for "adequate" disclosure of accounting information in prospectuses, annual reports and other corporate publications which

require that these media should contain sufficient information to make them useful and not misleading to the average investor.

Clarifying matters further, Jarrell (1981) maintained that the purpose of securities regulation is not to protect or to prevent investors from choosing risky securities. Rather, it is meant to protect them from losses in wealth occasioned by the use of deception, fraud, insufficient information and other manipulative activities. Gower (1984) remarked in a similar manner, but suggested, however, that regulation should not impose unduly restrictions that can not be complied with except at disproportionate trouble and expense. On evaluating the US Securities Acts in regulating new issues of securities, Knauss (1964, P. 616) had this to say:

> The high quality of administrative checking has permitted investors to rely on the published prospectus. It can be safely stated that the Securities Act has prevented numerous investors from buying poor quality stocks. Further, knowledge of the detailed scrutiny of registration statements by the Securities and Exchange Commission has had a prophylactic effect in discouraging shady promoters from attempting to go to the public for capital. The Securities Act appears to have acted well in times of normal market behaviour.

Has mandated financial disclosure been effective in preventing (or reducing) fraud in securities trading? To answer such a question, Segliman (1983) examined series of studies undertaken between 1941 and 1950 by agencies of the US government on fraudulent practices accompanying new issues of securities. He found that fraudulent practices occurred more frequently with issues not covered by mandatory disclosure rules. This implies that disclosure regulation has reduced (not prevented) fraudulent practices of new issues of securities.

In spite of the above, several writers (for example, Benston, 1976; Easterbrook and Fischel, 1984) have, however, questioned the efficacy of disclosure rules as a device for preventing fraud. Their objection is based primarily on the implications of the semi-

strong form of the EMH which were discussed earlier in this chapter. In another respect, Benston (1977) disputed the hypothesis that securities fraud (that is, market crashes) led many countries[11] to enact laws regulating trading in securities:

> There is almost no evidence to support the assertion that the financial statements of publicly traded companies were fraudulently or misleadingly prepared in the years prior to the passage of the Securities Acts. The US Senate hearings that preceded passage of the 1934 Act cite only a few instances of fraudulent financial statements. There were very few cases before 1934 that charged accountants or companies with fraudulent or grossly negligent financial statements. (Benston, 1977 pp. 47-48 [footnotes omitted])

Benson's assertion can not wholly be accepted. The lack of widespread fraudulently prepared financial statements does not mean that all financial statements were honestly and diligently prepared. The failure to discover evidence of fraud can not (and should not) be taken as conclusive. As Benson pointed out in the above quotation, there were instances, though few, of fraudulent financial statements to merit the passage of such laws. Corporate fraud has been pervasive for years and is widely acknowledged. In fact, Benston admitted in one of his earlier studies that:

> Prior to the Securities Acts, it was very difficult to bring suit against public accountants for fraudulently or negligently prepared financial statements. Stockholders and potential investors were considered third parties, *not privy* to the contract between the corporation and its accountants. (Benston, 1969, p. 518 [Emphasis mine])

[11] A literature review indicates that, historically, legislations regulating trading in securities and the conduct of publicly-held companies were generally enacted following market collapse in many different countries. For example, the blame for the South Sea Bubble was placed at the doorstep of speculators. The Bubble led to the enactment of the UK's Act of 1720 which prohibited the formation of joint stock companies; the collapse of the City of Glasgow Bank led to the UK's Companies Act of 1879; the US's Securities Acts of 1933 and 1934 were enacted to prevent the reoccurrence of the events which led to the stock market crash in 1929; the Rae Committee Report to the Australian Senate was a consequence of the boom and bust of that country's mining industry (Watts, 1977) and the crash on Kuala Lumpur Stock Exchange in 1982 (Pillai, 1986).

Promotion of Fair Dealing

Related to the investor-protection objective is the promotion of fairness among dealers in corporate securities. Generally, unfair dealing in securities is ascribed to trading on inside (material, non-public) information. What constitutes inside information has been a fundamental problem of the rules[12] prohibiting trading on such information. Ronen (1977) offered an insight by specifying those information sub-sets which will normally constitute inside information:

> . . . news about earnings or dividend announcements, acquisitions or dispositions of businesses, results of financial negotiations, changes in management or control, new product development or other business expansion and significant litigation or liability claims. In addition, information concerning prospective market activity in the security by institutions or other large traders, possibilities of major developments in any of the above-mentioned categories, prospective accounting decisions or changes in accounting policies, or emerging trends of business activity . . . . (Ronen, 1977, p. 440)

Karmel (1993, p. 154) went further to distinguish inside information from market information by defining the former as:

> Non public information about events or circumstances related to a company's assets or earning power which is known only to corporate management and its confidants, and which can reasonably be expected to affect materially the company's share price.

In contrast, Karmel (1993, p. 154) defined market information as:

> Information about events or circumstances that affect the market for a company's securities but which does not affect the company's assets or earning power. Market information may be referred to as 'outside information' because it relates to activities generated by investors, traders, market makers, brokerage companies or others.

[12] Ludman (1986) has categorised these rules into two: (a) those that prohibit corporate insiders from certain types of trading activities in the securities of their company, and (b) those that prohibit trading on material, inside (non public) information by anyone, insider or not. He termed them as corporate insider rules and inside information rules respectively. This distinction is, however, not drawn in the analysis of this study.

Implicitly, inside information must not be likely to be possessed or capable of being generated by an alternative source. This condition is likely to prevail in a situation where either the possessor has a monopolistic access to the information or the cost of producing such information by an alternative source will be relatively costly.

Insider trading can be viewed as a problem of non-disclosure of material facts regarding a company's assets and its earning power. The rules against trading on inside information, therefore, seek to prohibit the unfair advantage that insiders can enjoy over other market participants who have no access to such information until it is released.

The overall object of insider trading laws was expressed by a Senior District Judge, Foenauder, in a Singaporean case (*Public Prosecutor v. Allan Ng Poh Meug [1990] 1 MLJ v*) as:

> . . . to protect corporate confidences and to prevent insiders privy to such confidences from benefiting on an unfair advantage when they deal in the market. When they do deal in those circumstances, they abuse their position and the confidences imposed in them which, in turn, undermines the integrity of the market . . . . (Cited in Ashe and Counsell 1990, p. 11)

Disclosure regulation is a means of facilitating equal access to information.[13] In an attempt to make information available to all investors at more or less the same time so that the benefits of new information are not confined to insiders and market professionals, disclosure regulation seek to protect the less informed from the more informed.

The proponents of the prohibition against trading on inside information argue that the practice impairs market efficiency and liquidity (see, for example, Ludman, 1986; Hannigan, 1994). Allowing corporate managers to trade on inside information

[13] Suter (1989, p. 206) has expressed doubt as to the achievement of this objective in the real world due the problems of time lag. He argued that, in practice, information will be available to and used by somebody before others. He argued further that, in substantive terms, it becomes a mandatory requirement to disclose well after the occurrence of the event by which time most of the information might already have been in the public domain.

could deter ordinary investors from trading, leading to market thinness. Indeed, numerous empirical studies have shown that corporate insiders have private information, trade on them and earn significant abnormal returns (Jaffe, 1974; Finnerty, 1976; Baesel and Stein, 1979), but outside investors cannot profit from using the publicly available information about insider trading (Seyhun, 1986).

The principles underlying anti-insider trading rules have, however, been challenged (see Manne 1966; Wu, 1968; Carlton and Fischel 1983; Macey, 1991; Bergmans, 1991). It is argued that insider trading prohibitions create market inefficiencies and should therefore be abolished. Wu (1968), for instance, argued that the practice is, in an economic sense, positively beneficial and ought not to be prohibited. He argued further that speculation performs an important service in a free market system as it stabilises prices. The suggestion is that insiders have a better than average foresight and know what the normal prices are in the market. Their activities therefore drive prices of securities towards this normality; which reflects the true values of these securities. That is, basing their trading on inside information they tend to iron out mis-guided price fluctuations and bring the market price to a more realistic level.

The above hypothesis is questionable, given the insignificant impact that insider trading is likely to have in some sophisticated securities markets, like the NYSE and the LSE. Indeed, the available empirical evidence suggests that insider trading has a negligible impact on the market as a whole (Wu, 1963). This finding has been confirmed by a more recent study conducted by Bernhardt, Hollifield and Hughson (1995). They presented empirical evidence that insider trading influences investment only if insiders have large stake in their companies. They examined the consequences of insiders' incentives for either concealing information (to obtain immediate profits) or trading in such a way that they reveal their information (to influence investment), in a

dynamic general equilibrium economy whereby investors are assumed to be rational, but uninformed. It is even more interesting to note from their results that insider trading is socially beneficial when inside information has a high value in investment decisions, and this revelation was particularly significant when insiders have a stake in the company's future. Thus, to convince investors that they have observed good news or to conceal their bad news, insiders have to hold large stake in their companies. They also found that when inside information has little predictive power for future payoffs, insider dealing causes welfare loss as insiders always seek to profit by concealing their information.

Though its philosophy is being questioned, anti-insider trading rules is nevertheless, a necessary supplement to a disclosure regulation. It ensures that confidentiality is not abused. In addition, it forbids the utilisation of inside information for personal and secret gains of corporate managers and employees or persons associated with take-over bids. If insider trading is allowed, it will deny individual investors (not managers who are investors) reasonable expectation of fair and equal treatment. Moreover, it will distract insiders from their corporate duties and functions and could tempt them to subordinate their companies' interests to those of their own.

Provision of Valuable Information for Investment Purposes

The main thrust of the argument in this section is that financial statements provide information useful to investors, creditors and other users. It does not only enable them to predict, compare and evaluate potential cash flows to them in terms of amounts, timing and related uncertainty, but also to monitor management performance against contractual provisions. As the US SEC puts it "disclosure of financial information is essential so that investors may make a realistic appraisal of the merits of

securities and thus exercise an informed judgement in determining whether to purchase them" (cited by Benston, 1976, pp. 101-102). Mundheim emphasised this in his opening address to a symposium on securities regulation. He states:

> The theory of the Securities Act is that if investors are provided with sufficient information to permit them to make a reasoned decision concerning the investment merits of securities offered to them, investor interests can be adequately protected without unduly restricting the ability of business ventures to raise capital. (Mundheim, 1964, p. 647)

Later, a Committee of the American Accounting Association chaired by David Solomons added an authoritative backing to the importance of the need for accounting information for investment purposes. The Committee stated in its 1971 report that:

> Accounting reports provide the information by which millions of investors judge corporate investment performance and by reference to which they make investment decisions. Every day, decisions concerning the allocation of resources of vast magnitude are made on the basis of accounting information. (Cited by Martin, 1971, footnote 43)

The above analysis leads to the decision-relevance aspect of accounting information. Chambers (1966) has dismissed the relevance of historical cost-based accounting information for investment decision making purposes. He argued that income reported by historical cost accounting is not decision relevant with respect to choices among investment opportunities. Benston (1967) contributed to this debate but was cautious in condemning the usefulness of accounting data. He was concerned with the assumption that financial accounting information is of value to investors. He hypothesised that if investors use accounting data to evaluate their expectations of companies, then changes in their expectations caused by the data, holding all other factors constant, should be reflected in changes in the companies' stock market prices. In this regard, Benston empirically examined the relationship between reported accounting data used by investors (and potential investors) and stock market prices. He

concluded that relatively small portion of the information used by investors is contained in published annual reports.

Martin (1971) has, however, criticised the results of Benston's (1967) study. According to Martin, Benston chose wrong "timing" for his dependent variables[14] with the consequence that Benson's model could not capture the time during which the market reacted to the changes in accounting information. Backer (1969) made essentially similar argument in his comments on Benston's (1969) paper which relied partially on the results of his (Benson's) earlier paper (that is, the 1967 study already cited). Martin (1971) presented empirical evidence in support of the decision-relevance of accounting annual report data for investment decisions.

Improved Efficiency of Resource Allocation

This objective is based on economic efficiency and has been the strongest and the most undisputed policy goal of securities regulation. The belief is that the provision of information to investors (existing and prospective) is a necessary condition for efficient market. In other words, timely disclosure of corporate financial information will strengthen the functioning of the market as an economic institution. This is achieved in two ways. First, it aids in setting equilibrium security prices that affects the allocation of "real" resources and companies production decisions. Second, it enables individuals to exchange claims to present and future consumption, thereby attaining both preferred patterns of lifetime consumption and the sharing of risks. The stock market performs essential and useful function in a country's economy in the allocation of capital resources among various competing ends. The efficiency with which this

[14] Benston (1967) used the rate of change in stock prices as his dependent variable which he measured in five different ways: (a) the month in which final accounting data are made public; (b) the month in which preliminary data are announced; (c) one month prior to the preliminary data month; (d) two months prior to the preliminary data month, and (e) the sum of the month prior to the preliminary data month and the two months previous. Each measure of the dependent variable was not completely independent of others.

allocative function is performed determines, in a greater extent, the overall growth and efficiency of the economy itself. It is, therefore, crucial that the stock market remains efficient.[15]

Generally, the concept of market efficiency is used in the finance literature in several different ways. They include: (1) allocational, (2) operational, (3) informational, and (4) perfectly efficient. The role of the market in any competitive economy is to allocate optimally the scarce resources between competing ends. This means that the highest bidder for the resources gets to use them. When this occurs, the market is said to be *allocatively efficient.* Second, the market is said to be *operationally efficient* when the transaction costs of operating in the market are determined competitively; with no participant (especially market makers and brokers) earning monopoly profits on their activities. This implies that the cost of making a market, in the strictest sense, should be zero. However, this is not so in the real world situation. Third, the market is said to be *informationally efficient* when prices instantaneously, unbiasedly, fully reflect all material, relevant publicly available information. Finally, the market is said to be *perfectly efficient* if it is simultaneously allocatively efficient, operationally efficient and informationally efficient.

Although the first three concepts of market efficiency are inter-related, the discussion in this section is focussed only on the allocational efficiency. It is believed that regulatory rules will ensure "full" and "fair" disclosure of company-specific information on timely basis. This will enable the stock market to value listed securities on the basis of the capitalised value of earnings potential and operations of the companies they represent. The mode by which securities are priced by the market is critical to the effectiveness of the market as a resource allocator (Baumol, 1965). That

[15] Stigler (1981) has shown, however, that the stock market may be competitive and efficient; its resource allocation function may not be Pareto optimal.

is, investible funds will only flow to companies which can best utilise them in the light of prospective consumer demands and technological circumstances, for the benefit of the whole economy, if securities are priced to reflect the economic value of the real resources which they represent. This is aided, as already shown, by the provision of quality company-specific information required under regulation. The dangers of inadequate corporate disclosure of information were highlighted in the following conclusion arrived at by Singhvi and Desai (1971, p. 137):

> . . . inadequate corporate disclosure . . . is likely to widen fluctuations in the market price of a security since investment decisions, in the absence of adequate information, are based on less objective measures. These fluctuations . . . lead to inefficient allocation of capital resources in the economy. The market system, under these circumstances, becomes a less efficient allocator of the nation's resources.

Though the study leading to the above conclusion has been found to have significant design limitations (see Garsombke, 1979), it is assumed to be valid for the moment. Inadequate information does not help in reducing the inevitable uncertainty in investment decision making. Rather, it helps to generate (or maintain) a level of excessive speculation and gambling in corporate shares, which can create wide dispersions in share prices. This may not, however, help investors to differentiate strong companies from the weak, thus possibly reducing the efficiency of the market. It follows that adequate disclosure of information will lead to the attainment of allocational efficiency.[16] The reason for this was provided by Benston himself. He stated that:

> . . . financial disclosure facilitates and may even be necessary for resources to flow to those companies in which the marginal return (net of risk) is greatest, thus tending to maximise the wealth of the nation. (Benston, 1976, p. 101)

[16] This statement is doubtful when considered critically in the light of the findings of two complimentary studies into investment behaviour (see, for example, Stallman, 1969 and Dascher and Copeland, 1971). It was found in these studies that the investment decisions of investors who were provided with additional (or much) information were not significantly superior to those of the control group.

However, this objective of disclosure rules has been critically challenged within the framework of modern finance theory - particularly the EMH and modern portfolio theory (MPT) and its offspring, the capital asset pricing model (CAPM). As noted earlier, the semi-strong form of the EMH questions the regulation of financial disclosure, but recall that, the findings of security price studies are inconclusive and their evaluations of mandatory disclosure rules are inherently deficient. These make the generalisation of their findings difficult. Another criticism of the studies analysing the economic impact of accounting regulations is that they focus mostly on stock market prices, knowing that the stock-price effects are only a small portion of what constitutes economic consequences. Apart from these, there is considerable evidence that disclosure regulation has benefited even efficient capital markets (see Meier-Schatz, 1986a, pp. 225-226 for detailed examples of these).

The critics of the efficiency-based objective yet claim under the MPT (and the CAPM) that investors are able to eliminate substantial amount of risks associated with individual securities through the holding of a diversified portfolio. Hence, the use of mandatory disclosure rules to categorise securities into weak and strong is unnecessary. Kripke (1975) accepted the view that diversification reduces risk, but argued, however, that it does not make disclosure regulation superfluous. Coffee (1984) supported this view and argued that mandated information may benefit small and unsophisticated investors in two ways. First, most individual investors do not hold fully diversified securities. Second, the compulsory disclosure of financial information may be significant for investors in the revision of their portfolio. Thus, in an attempt to estimate the impact of new securities upon the overall beta level of their portfolio.

Preservation of Confidence in Capital Markets

Another objective under the public interest theory of regulation is to restore, instil, or boost public confidence in capital markets. As Benston noted:

> If the public fears investing in securities because it either can not get sufficient information about companies or does not trust the information available, it may invest in other types of contracts, for example, real estate, and/or reduce its otherwise desired level of savings. Financial disclosure, mandated and supervised by the government (*or its approved agent*), is presumed to alleviate this problem, *thereby restoring or maintaining the necessary confidence*. (Benston, 1976, p. 103, [Emphasis mine])

Thus, in such situation, investors (especially the small and unsophisticated ones) are more likely to withdraw their capital to the detriment of the market in particular, and the economy as a whole. The reason for this is that the small and unsophisticated investors fear they may be exploited by companies or better-informed traders. The market will cease to be efficient as it may be seen as no more a fair game market. Consequently, the EMH will cease to be valid. It is, therefore, necessary that some safeguards are put in place to avoid this problem. As Meier-Schatz (1986a) noted, the maintainence (or the restoration) of public confidence in the market largely depends on the ability of the information disclosure regulatory system in making investment on the market a fairer game. The reputation of the securities market as a fair and orderly market is crucial. Public respect for the market and the function it performs will diminish when it becomes known or suspected that the market unduly favours certain privileged individuals such as corporate insiders and market professionals. It is, therefore, important that each investor who comes to the market feels that he or she is subject to the same degree of risk as everyone else in the market.

Summary

This chapter has reviewed the theories of corporate disclosure. Both advocates and critics of each theory have marshalled a substantial amount of valid conceptual arguments and empirical evidences to support of their respective stands. Yet, there is simply no way of demonstrating the superiority of one over the other. However, while perhaps obvious, it worth emphasising that, strictly speaking, the capture theory is not to explain why corporate disclosure is regulated or de-regulated. But rather, to describe the inefficiencies of regulatory agencies and their failure to live up to the expectations of society. Thus, it is used in a derogative sense.

For the free market and the public interest theories, the arguments seem to be finely balanced. In logic, however, the case for the public interest theory, in as far as disclosure as a means of regulating corporate securities is concerned, is undoubtedly the stronger. Knauss (1964, p. 648) noted:

> Disclosure is not an effective regulatory device in all circumstances and, as evidenced by recent attempts . . . can not be used indiscriminately. In the area of securities regulation, it has proved its value. As a *method of* regulation of corporate behaviour, disclosure offers the best available means of achieving desired results without the restrictiveness of direct regulatory control.

Also, given the conceptual and methodological deficiencies of studies on the EMH, aimed at supporting the free market approach to the production of accounting information, makes the latter an imperfect tool.

It is appropriate, however, to say nothing about the form regulation should take as it involves innumerable problems in drawing up effective provisions which is outside the scope of this study. What is important is the recognition that a number of valid policy grounds exist for mandatory corporate financial disclosure.

CHAPTER V

THE THEORETICAL FRAMEWORK FOR REGULATORY ENFORCEMENT

> Whilst jurists and philosophers may argue that the validity of law is a matter wholly independent from the ability to enforce it, in the real world a law which is not enforceable is of doubtful value.
>
> (Rider, 1983, p. 283)

> Law may be enforced by compulsion and coercion, or by conciliation and compromise.
>
> (Hawkins, 1984, p. 3)

While the previous chapter discusses the arguments for and against corporate financial reporting regulation, this chapter discusses the theories that underpin how the regulation should be enforced. Specifically, it examines three competing theories of regulatory enforcement. It also describes the market regulatory framework currently in use on emerging stock markets.

Regulatory Enforcement Theories

Veljanovski (1984) notes that research on regulation, in general, has been compartmentalised into several processes, namely standard-setting (that is, the rule-making activities); bureaucratic behaviour (that is, the politics of standard-setting); enforcement and compliance; and the impact and efficiency of specific regulations (that is, cost-and-benefit analysis of regulation). In the context of accounting in emerging economies, with few exceptions (see Wallace, 1987, 1988; Tai et al., 1990; Ahmed and Nicholls, 1994), a detailed analysis of the enforcement and compliance processes of accounting regulation has received little or no attention in the literature. Against this background, accounting researchers have focused almost exclusively on the development

of standards (that is, the policy-making phase of regulatory process) and the political issues associated with it.

A review of the literature on economics of regulation indicates that there are three competing theories of regulatory enforcement. These regulatory enforcement styles (or strategies) are: (1) deterrence-oriented or adversarial model; (2) co-operative or conciliatory model; and (3) the evolutionary game theory model. The characteristic differences between these theories are examined below.

Deterrence Model

The deterrence model of regulatory enforcement is based on assumption that regulated companies would comply with all legal and regulatory requirements, and that those that violate the law should be punished. In other words, it assumes full compliance with regulatory requirements. It assumes further that regulated companies will comply with the regulations to the extent that the value of expected costs of compliance and punishment for non-compliance exceeds the value of expected benefits of non-compliance (Stigler, 1970). This regulatory enforcement model is penal and legalistic. It relies more heavily on formal sanctions such as administrative penalties, and civil or criminal prosecution as enforcement instruments. It applies strictly the definition of compliance found in the "black letter law."

Bardach and Kagan (1982) have criticised the deterrence model as being counter-productive as it induces antagonistic relationships between the regulatory agent and the regulated companies. They added further that it treats minor and major violations equally. It does not also distinguish episodic, persistent failure to comply from isolated, discrete incidents of non-compliance. Scholz (1984a, 1984b, p. 388ff) and Diver (1980, p. 264) have demonstrated analytically that the deterrence model of regulatory enforcement is not socially optimal.

Co-operative Model

The propagators of the co-operative model of regulatory enforcement argue that formal sanctions, advocated by the proponents of the deterrence model, offer regulated companies little economic incentives to make the effort required to comply with legal and regulatory requirements. They contend further that other mechanisms of social control such as advice, persuasion, and negotiation lead most companies to comply. This regulatory enforcement approach emphasises flexibility and selective enforcement that considers the circumstances of an observed violation (Scholz, 1984a). Simply put, trivial violations of regulatory requirements are overlooked, but serious violations are noted, and reasonable explanations and undertaking to amend them in the future are accepted in lieu of prosecution. Because reality is more complex, regulated companies respond to a given regulation depending on their individual circumstances. Regulatory agents that employ the co-operative enforcement strategy therefore interpret rules flexibly. Also, because regulatory compliance costs (those incurred by complying reporting companies and those by regulatory authorities that monitor compliance) could be high, it is only prudent for the agencies to conserve society's scarce resources by accepting companies' compliance levels which are even below the agency's interpretation of full compliance, but above the expected levels that may be obtained under deterrence model (Scholz, 1984b). The co-operative model seeks to ensure that minimal compliance with regulatory requirements are being met at the least cost to both the regulated companies and the agency.

Like the deterrence model, the co-operative model also utilises legal sanctions as enforcement device, but as a last resort (Veljanovski, 1984). Also, the motive for invoking legal sanctions under this model is, however, quite different; it is not so much to punish the violator, but to signal the failure of bargaining over compliance and to prevent future violations (non-observance of mandatory requirements). This conciliatory style of enforcement relies on bargaining to attain conformity (Hawkins, 1984). Distinguishing

between the deterrence and the co-operative approaches to regulatory enforcement, Black (1976, p. 4) concludes that the latter is a form of "social repair and maintenance" designed "to ameliorate a bad situation," whereas the former "prohibits certain conduct, and enforces its prohibitions with punishment." The main limitation of the co-operative model is that the cordial relationship between the regulatory agent and the regulated companies can generate the former's sympathy for the latters' plight, a subtle form of "capture" (see Bricker, Bailey, Grant and Turner, 1993).

The Evolutionary Game Theory Model

Essentially, the evolutionary game model is derived from the two theories discussed above. It is a recent development in regulatory enforcement theory. It is a "tit for tat" approach to regulatory enforcement whereby the regulatory agent initially attempts to persuade a violator to comply, switches to punishment if persuasion fails, and then reverts to softer tactics if harder ones evoke a co-operative response to the regulatory requirements (Scholz, 1984b). It is a reactive model. Put differently, it is a vengeful strategy; which retaliates when a regulated company defect. It is also a forgiving strategy which responds if a previous violator begins to comply. Scholz (1984a, 1984b) and Ayers and Braithwaite (1992) are the advocates of this approach to regulatory enforcement. Although the game theoretic model to enforcement offers a basis by which a regulatory agent and regulated companies' behaviour can be predicted, it is more of a subjective evaluation of their behaviour which may or may not be true. Also, because the inter-relationship between the regulatory agent and the regulated companies is responsive and dynamic, the core concepts of the model will be difficult, if not impossible, to be tested empirically. Fenn and Veljanovski (1988, p. 1065) have questioned the efficacy of the evolutionary game theory. They argue that since the model is a mixed strategy to enforcement; its efficiency will depend on the regulatory agent's ability to signal clearly

which category each regulated company has been assigned. They explain further that any ambiguities in the classification of the companies as co-operative or non co-operative will undermine the efficacy of the model.

Regulatory Framework of Emerging Stock Markets

van Agtmael (1984) identifies three main types of market regulatory framework operating in emerging stock markets. The first is modelled on the US market regulatory system. The second is a replica of the British model. The third model is termed an emerging model developed by emerging stock markets. The subsequent sub-sections describe each of the regulatory frameworks in turn.

The US Model

Typically, there is a comprehensive capital market law that covers the regulation of both the primary and the secondary markets, and which specifies how the stock exchange, underwriters, dealers, brokers and investment managers are to operate. Such laws also provide standards for financial accounting and disclosure, and auditing. The capital market law in most cases also provides for sanctions against price manipulation and insider trading.

Under such laws, securities commissions are established to administer provisions of the law on daily basis. The commissions are also empowered to issue further rules and regulatory legislations. Although the stock exchange and the brokers' association may have self-regulatory functions, they are obliged to take some day-to-day responsibilities from the securities commission. The equity markets in the Latin American countries, South Korea, the Philippines, Pakistan, Indonesia, Nigeria, Ghana, Egypt, Turkey (in 1981), and Cyprus have modelled their regulatory frameworks on the US system. The regulatory system of US securities market is based on the deterrence

model of regulatory enforcement. This explains why the investment climate in the US is characterised by litigation. The US securities regulatory agent, the SEC, has the authority to investigate possible violations of securities law, and to seek appropriate remedies such as civil injunctive actions, administrative proceedings, and civil and criminal contempt proceedings (Alford, Jones and Zmijewski, 1994).

The British Model

This model does not rely on comprehensive securities legislation and a securities commission, but on listing requirements, other rules of behaviour of the stock exchanges; and self-regulation by their members. Generally, there is no specialised, separate, and comprehensive agent of securities legislation. Provisions are incorporated in more general legislations such as company laws, and take-over codes. This model is used, with modifications, in some British colonies such as Hong Kong, Singapore, Malaysia (Pillai, 1986), Zimbabwe, and Kenya. The British model is also used by other stock exchanges in the continental European countries.

It must be pointed out, however, that the LSE is now governed by a US-style system. Since 1987, the LSE has been overseen by a private sector body, Securities and Investment Board, with statutory powers. Zimbabwe has considered to adopt the US-style by establishing a regulatory commission. Perhaps, the codification of the accounting standards is an attempt in that direction.

The New Emerging Model

A new approach introduced by some emerging stock markets combines the functions of the securities commission and the stock exchange into one organisation. In some cases, this approach is similar to the US model where a comprehensive capital market law forms the basis of the regulatory framework. Thailand and Jordan are typical equity stock markets that have chosen this new model.

Summary

This chapter has discussed the three competing theories that underlie enforcement and monitoring practices of securities regulatory agencies. It has also described market regulatory frameworks of emerging stock markets. Zimbabwe employed the co-operative model to enforce compliance with its financial accounting standards (the adopted IASs) until May 1996 when it changed to the deterrence model with the codification of the adopted IASs.

PART C

RESEARCH DESIGN AND MEASUREMENT

CHAPTER VI

MEASURING DISCLOSURE: RESEARCH METHODOLOGY

> *The link between observation and formulation is one of the most difficult and crucial of the scientific enterprises. It is the process of interpreting our theory or, as some say, of "operationalising our concepts." Our creations in the world of possibility must be fitted in the world of probability; in Kant's epigram, "Concepts without precepts are empty." It is also the process of relating our observations to theory; to finish the epigram, "Precepts without concepts are blind."*
>
> *(Scott Greer, 1969; quoted in Zeller and Carmines, 1980, p.1)*

This chapter provides an integrated overview of the nature of the abstract concept under investigation. More particularly, it provides a basis for making sense of "disclosure adequacy" and its underlying precepts. The chapter reviews some research procedures that are used to empirically observe this concept in the real world, together with how it was measured in this study.

Stock exchanges serve as an intermediary between borrowers and lenders of investible capital resources. This is particularly true of the primary market. Generally, the borrowers are corporate bodies managed and controlled by professional managers who are quite separate from those who own the business. The lenders, on the other hand, are mainly the general public who have surplus funds and are looking for alternative means of investing their funds. The investing public is more at risk of losing its investment should a company go into liquidation due to the opportunistic behaviour of its management. Also, the economic prospects and policies of the borrowing companies, and hence, the qualities of the related securities, are difficult and costly to observe. Investors, therefore, need to be protected, and stock exchanges do this in three complementary ways. The first is by licensing of brokers and market-makers. Legally,

only suitably qualified and competent individuals (or corporate bodies) are permitted to deal in securities. To engage in securities dealings without proper authorisation is a criminal offence. The second is to compensate investors in the case of loss due to dishonesty, insolvency, death or default of a registered stockbroker. Compensatory schemes are designed to help unknowing investors in the event of fraud or other misconduct, and not to repay any loss sustained in a risky investment. The third way of protecting investors, and which is fundamental to this study, is to mandate public disclosure of certain information by listed companies. Thus, stock exchanges require listed companies (or those to be floated) to be as transparent as possible in their corporate reporting to the public. This is achieved by the stock exchanges through monitoring and enforcing compliance with the financial reporting requirements on listed companies.

Types of Mandatory Disclosure System

Mandatory disclosure system is an administrative, institutional arrangement to ensure that information relating to the economic activities and transactions, and financial policies of a company are made available to the investors and creditors of the company. A literature search revealed that there are several, but related aspects of mandatory disclosure system as set out in Figure 6.1 (compare with Wallace, 1987, p. 26 figure I.1). They are not mutually exclusive. They complement each other depending on whether a company is being floated or an already listed company making a public offer.

A continuous disclosure system requires listed companies to report to the public (and to the stock exchange) on a regular basis at a pre-determined periods of time. The need to up-date the information filed with stock exchanges has become increasingly important due to the ever-changing economic situations faced by investors. The

frequency and timeliness of reporting under a continuous disclosure system depends on the requirements of individual stock exchanges and/or company law in some countries, including Zimbabwe and the UK. It can be quarterly (for example, US and Singapore), semi-annual (for example, UK and Zimbabwe) and annual or any combination of these.

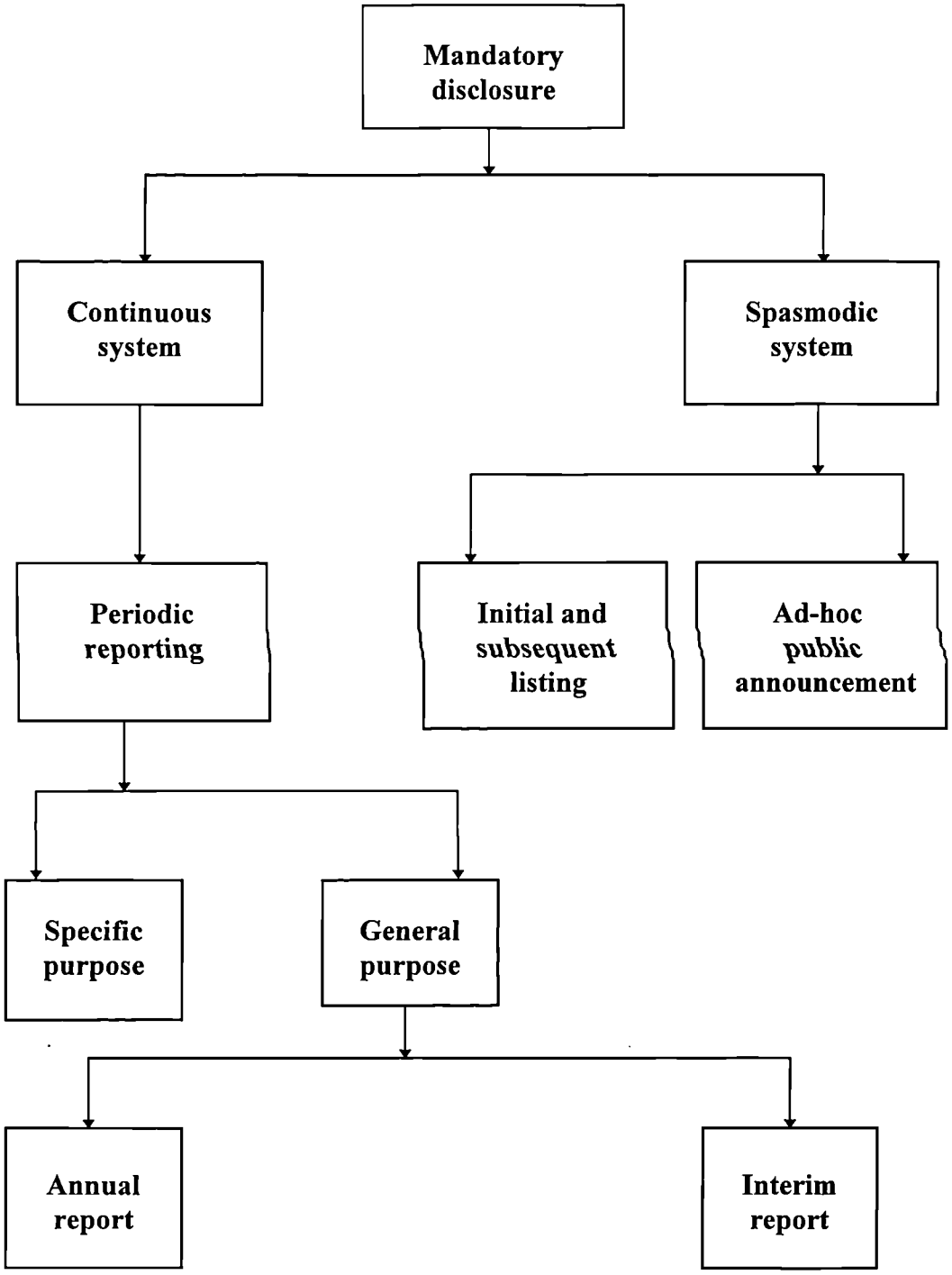

Figure 6.1: Schematic representation of types of mandatory disclosure system

Although reporting requirements and practices vary between different stock exchanges, the norm has been for most of them to require the publication of audited annual reports and accounts within the time limit of six months from the financial year end of the reporting company. In addition, most stock markets require listed companies to provide audited or unaudited interim reports at quarterly (for example, in the US and Canada), and half yearly (for example, in the UK and Zimbabwe) intervals.

A continuous disclosure system can be classified as general- (or all-) and specific-purpose reporting. A general-purpose report does not address the information needs of any specific user group, but all user groups. A specific-purpose reporting focuses on the needs of a specific user group such as those financial statements usually addressed specifically to employees or concerned with environmental and social responsibilities of the reporting companies.

A mandatory disclosure system is described as spasmodic when listed companies are required to announce to the investment community any significant event that may affect the value of the company as and when the event occurs. Thus, it is an irregular reporting system which depends on the occurrence of an event that may affect the economic value of the reporting company. For instance, because new issue of shares dilutes the rights of existing shareholders, listed companies are obliged to make substantial disclosure in their prospectus. Disclosures in prospectuses are a typical example of initial and subsequent listing requirements. Information items such as de-merger, acquisition, change or death of the chief executive, information released to the press and at financial analysts' conferences are examples of ad-hoc public announcement type of spasmodic disclosure system.

Contextual Definition of Disclosure

The concept of disclosure is very important in financial accounting and reporting. Bevis (1965, p. 201), for instance, asserts that:

> No matter how extensively consensuses on accounting and reporting practices are established and how closely they are followed, the principle of full and fair disclosure must remain the keystone of successful corporation-stockholder and corporation-society relations.

Although made in 1965, the above quotation is of relevance to corporate reporting practices today. This relevance is evidenced by the increased efforts of the investment community, international accounting organisations, and regulatory bodies to extend the scope of corporate reporting and disclosure. What then is disclosure? In ordinary parlance, the term disclosure is normally taken to mean the act of making something public which hitherto was known only to insiders (Owusu-Ansah, 1997). Disclosure is analogous to advertising (Spero, 1979; Wallace, 1987), but voluntary disclosure is more so than mandatory disclosure (Owusu-Ansah, 1997). The reason being that voluntary disclosure is made at the discretion of the management of the reporting company, while a mandatory disclosure is made because of an external force. Kohler (1957) provided a more accounting-oriented definition of disclosure. He defined disclosure as "a clear showing of a fact or condition on a balance sheet or other financial statements, in footnotes thereto, or in the audit report" (Kohler, 1957, p. 82). While Kohler's definition specifies the location of disclosure, it does not offer a criterion by which to determine or identify disclosure. As a result, his geographic definition of disclosure is not likely to be very directive for accounting empirical research. A recent definition by Gibbins, Richardson and Waterhouse (1990, p. 122), however, appears to be useful for research purposes. They define financial disclosure as "any deliberate release of financial information, whether numerical or qualitative, required or voluntary

or via formal or informal channels." This definition has a setback of being too broad to be captured for a meaningful empirical study. As defined by Gibbins, Richardson and Waterhouse (1990), the scope of the information set extends to include disclosures in interim and annual reports, prospectus, and information released at financial analysts' conferences. Also, the definition does not cover non-financial data. Disclosure is not only limited to financial data.

Disclosure as pointed out by Gibbins, Richardson and Waterhouse (1990), is a purposeful act of informing the professional investment community, though, management has a discretion over what to disclose and what not to disclose. In the case of mandatory disclosure, however, such a discretion is either non-existent or constrained by external forces such as the regulatory body, the stock exchange, and the accountancy profession.[1] The costs of non-disclosure of an applicable information item required under a regulatory regime can be substantial. Non-compliance with a disclosure requirement by a company may either lead to the issue by auditors of a qualified audit report and/or the imposition of a penalty by the stock exchange on which it is listed. However, full compliance with mandatory disclosure requirements is not always attainable in practice, and more especially in emerging economies[2] (Tai et al., 1990; Ahmed and Nicholls, 1994). Ahmed and Nicholls have pointed out that in such economies there are incentives not to comply with mandatory disclosure requirements. They cited, among others, less stringent regulatory and enforcement systems, and high cost of employing professionally qualified accountants as contributory factors.

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[1] Lang and Lundholm (1996, p. 468) share this view, but argue that even with mandatory disclosure companies still have substantial discretion in the manner in which mandated items are disclosed in annual reports. Wallace and Naser (1995) made the same point about the comprehensiveness of mandatory disclosure.

[2] It must be stressed that non-compliance with regulatory or legislative requirements is not peculiar to emerging economies. Recently, Schwart and Soo (1996) document evidence of widespread non-compliance with the US SEC's rules requiring timely disclosure of auditor changes. See also Frost and Pownall (1994) for evidence of non-observance of regulatory requirements in the US and the UK.

Disclosure is defined as the communication of economic information, whether financial or non-financial, quantitative or otherwise of a company's "financial position and performance, and financial adaptability" (Accounting Standards Board, 1994). It is described as mandatory if companies are obliged under a regulatory regime to disclose in so far as they are applicable to them. Any disclosure by companies that is not mandated by law and/or self-regulatory bodies is voluntary. Thus, mandatory disclosure items that are applicable to a reporting company are considered in this study, as the minimum standard of disclosure that regulatory authorities expect from that reporting company.

For the purposes of this study, the present investigator adopts a more restrictive definition of mandatory disclosure. Mandatory disclosure is, thus defined here, as the economic information, whether financial or non-financial, quantitative or otherwise which the ZSE listed companies are required to disclose in their annual reports and accounts in so far as they are applicable to them under the financial disclosure regulatory regime that was in operation in 1994.

Conceptual Definition of Adequate Disclosure

Definitions of disclosure, such as those reviewed in the preceding section, do not shed much light on the basic nature of adequate disclosure. To establish its essential nature, Moonitz (1961) discussed the concept of disclosure adequacy in terms of: (1) What should be disclosed?; (2) To whom?; and (3) How disclosure should be made? Moonitz's discussion led the US Accounting Principles Board to state that any "financial information that meets the qualitative characteristics of financial accounting information also meets the reporting standard of adequate disclosure" (Accounting Principles Board, 1970). These qualitative characteristics of financial information are relevance, understandability, verifiability, neutrality, timeliness, comparability, and

completeness. Although Buzby (1974a) accepts this list as fairly complete, he suggests, however, that materiality should have been included. He elaborates that the nature of adequate disclosure can best be determined by seeking answers to the following inter-related questions: (1) For whom is the information to be disclosed?; (2) What is the purpose of the information?; (3) How much information should be disclosed?; (4) How should the information be disclosed?; and (5) When should the information be disclosed?

The questions of how and when the information should be disclosed can easily be answered, as the question of what is the purpose of the information, but not those of "For whom?" and "How much information should be disclosed?" (Buzby, 1974a). There are several user groups of financial accounting information including present and potential shareholders, creditors, financial analysts, employees, and governmental agencies. Moonitz (1961), in his discussion of disclosure, recognised that adequate disclosure can only be determined if the users of the information are specifically identified. The need to identify the user group for whom the information is to be disclosed is crucial as it has an added advantage of identifying the purposes for which the information is required. This, in turn, also helps to define the characteristics of the user group that might impinge on the specific type of information to be presented, together with the manner of presentation. For instance, the adequacy of a given disclosure partly depends on the level of competence of a particular user group in interpreting the accounting data. To this end, the AICPA's Trueblood Committee Study Group Report suggested a target user group as ". . . those users who have limited authority, ability, or resources to obtain information and who rely on financial statements as their principal source of information about an enterprise's economic activities" (Accounting Objectives Study Group, 1973, p. 17).

How much information should be disclosed partly depends on the assumptions that underlie the selection of the types of information that can be presented in corporate reports. Accountants operate under a set of assumptions which constrain the type of data that can be collected, measured, and reported (Buzby, 1974a). For instance, accountants can only account, and for that matter, report on those data that are based on verifiable, and objective evidence.

To foster understanding, three concepts of disclosure have been proposed in the literature: (1) *full* disclosure, (2) *fair* disclosure, and (3) *adequate* disclosure (Griffin and Williams, 1960; Hendriksen, 1982, p. 505; Belkaoui, 1985, pp. 237-238). Of these, adequate disclosure is preferred as it connotes a reasonable, practicable financial reporting objective (Griffin and Williams, 1960). It implies the presentation of a minimum amount of information in corporate reports, sufficient to permit a reasonable evaluation of the relative merits and risks of listed securities (Belkaoui, 1985).

Full disclosure refers to "complete and comprehensive presentation of information" in corporate financial reports (Belkaoui, 1985, p. 238). According to Belkauoi, full disclosure is, however, "a broad, open-ended construct that leaves several questions unanswered or opens to different interpretations." There is also the potential problem of presenting superfluous information in corporate reports. Too much information is dangerous as it obscures the true picture of the financial performance and position of the reporting company. From the perspective of users, there is the potential danger of information overload.

Fair disclosure refers to neutrality in the preparation and presentation of information in corporate reports (Monti-Belkaoui and Riahi-Belkaoui, 1997). The fair disclosure concept advocates expansion in the scope of conventional accounting information to include new information that will meet the interests of all stakeholders of a company (Monti-Belkaoui and Riahi-Belkaoui, 1997, pp. 71-105). According to

them, the new form of reporting will include such information on human assets, and employee reporting, and budgetary information disclosures. The fair disclosure is also inappropriate as it suggests moral judgment on preparers of corporate reports to consider the interests of all users of corporate reports equitably in preparation of these reports. (Griffin and Williams, 1960; Monti-Belkaoui and Riahi-Belkaoui, 1997).

Hendriksen (1982) pointed out, however, that there is no real difference between these phrases if they are used in the proper context. He argued that the primary objective of financial reporting should be to provide potential users with significant, and relevant information to assist them in the making of decisions at the least possible cost.

The concept of adequate disclosure requires that corporate reports should contain sufficient information to make them useful and not misleading. More explicitly, the concept of adequate disclosure requires that no information of substance or of interest to an average user should be omitted or concealed by the reporting company (Belkauoi, 1983, p. 210). For the information to be relevant, it must be released on time. It should also be readable, and be presented in a form that fosters understandability (Belkauoi and Kahl, 1977, p. 32).

Disclosure is a subjective, normative, and a broad concept (Cooke and Wallace, 1989). However, several constructs have been used as a proxy for the nature of disclosure in different empirical studies. These constructs include quality (Singhvi, 1968); adequacy (Buzby, 1974a, 1974b; Belkaoui and Kahl, 1977; Amernic and Maiocco, 1981; Belkaoui, 1983); comprehensiveness (Barrett, 1976; Wallace, Naser and Mora, 1994; Wallace and Naser, 1995); and informativeness (Alford, Jones, Leftwich and Zmijewski, 1993; Lang and Lundholm, 1996). While quality refers to the "completeness, accuracy, and reliability" of the information (see Singhvi, 1968, footnote 4), adequacy depicts the utility of the information to a targeted user (see Buzby, 1974a; Wallace and Naser, 1995). Similarly, while comprehensiveness is concerned with the

extent of detail of the information provided (see Barrett, 1976; Wallace and Naser, 1995), informativeness is about the capacity of the content of disclosed information to reduce users' uncertainty regarding a company's economic risk through the assessment of its impact on market value of the company (Imhoff, 1992; Alford et al., 1993; Elliott and Jacobson, 1994). As Wallace (1987) pointed out, each construct denotes "a standard of excellence measured along a continuum ranging from poor to excellent." A corporate disclosure practice is considered adequate if it reports all applicable relevant, material information on time to facilitate informed investment decision making. For a corporate disclosure practice to be adequate, it must satisfy or be capable of fulfilling the information needs of users of corporate reports (Buzby, 1974a; Belkaoui and Kahl, 1977; Wallace, 1987).

The attainment of adequate disclosure in the financial reporting practices of listed companies depends much on the enforcement and monitoring mechanisms that are put in place by regulatory agencies. Specifically, a stock exchange with a stringent disclosure regulatory enforcement system would ensure that its listed companies fully comply with all applicable requirements. The opposite would be true if the enforcement mechanism of the disclosure regime is lax because compliance levels tend to be low. Thus, listed companies partially comply with the disclosure requirements. On the basis of a literature search, a schematic representation of adequate disclosure practice is described in Figure 6.2.

Conceptually, as Figure 6.2 indicates, adequate disclosure is a function of the quantity (number of items) and quality of information disclosed therein, the form in which they have been presented, and how frequent and timely[3] they are publicly reported. Thus, a timely disclosure of economic information which is extensive (that is,

[3] As the American Accounting Association (1954) observed "timeliness of reporting is an essential element of adequate disclosure" (cited in Dyer and McHugh, 1975, p. 204).

in scope and in great detail) constitutes an adequate disclosure. However, the level of compliance depends much on the stringency of the policing and enforcement mechanisms of the regulatory regime. In this study, only a sub-component of adequate disclosure -- the extent to which mandated applicable information items is presented in the 1994 annual reports and accounts of the ZSE listed companies -- is investigated. As in Wallace (1987, p. 135), the timeliness aspect of adequate disclosure is not addressed in this study because it does not focus on the value-relevance of the information disclosed in corporate annual reports and accounts.

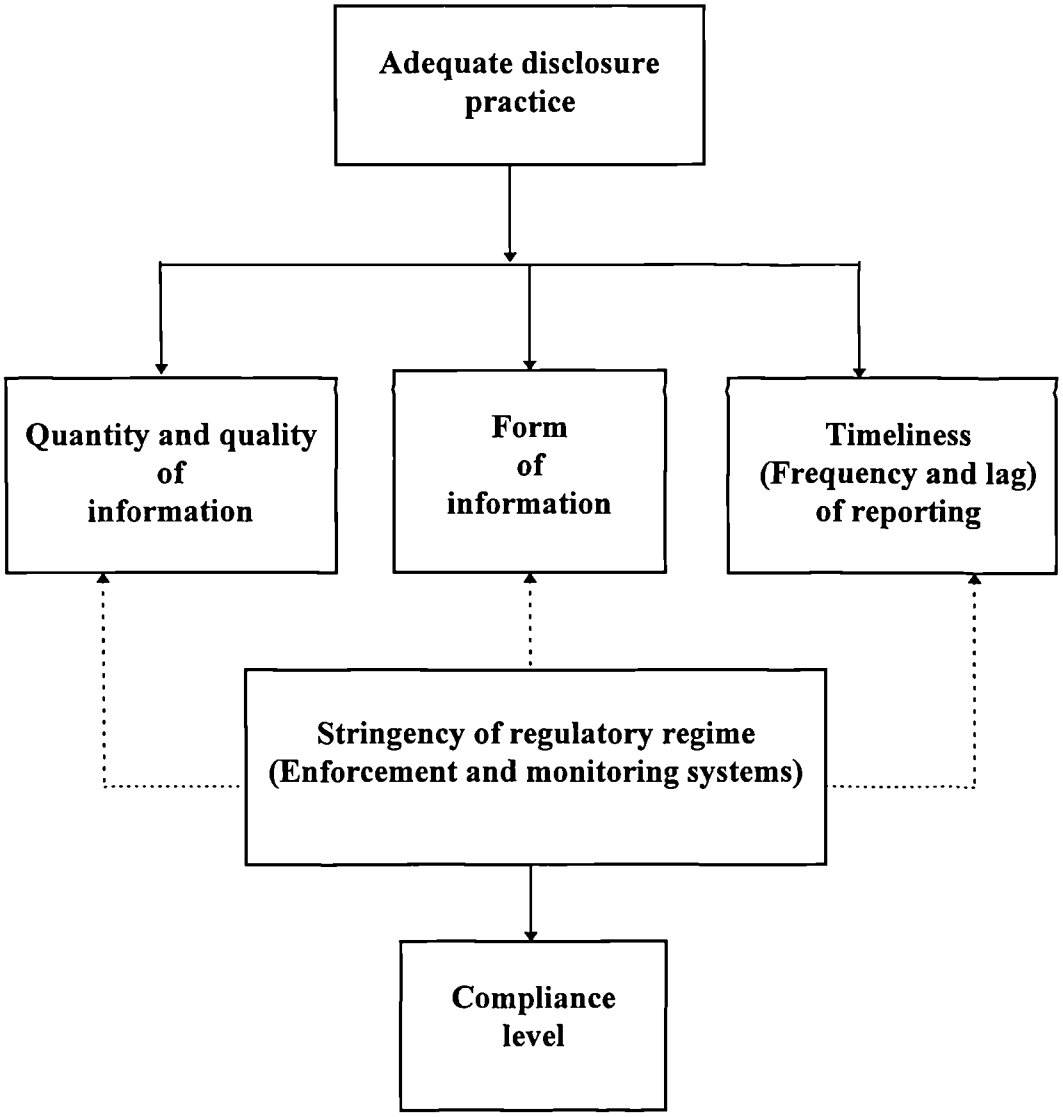


Figure 6.2: Schematic representation of disclosure adequacy

Operational Definition of Adequate Disclosure

As pointed out by Cooke and Wallace (1989), adequate disclosure is a theoretical concept which is subjective, relative, and broad. Thus, an annual report disclosure can be classified subjectively by its evaluator as excellent, average, or poor (Wallace, 1987). To measure disclosure objectively, an approximate model needs to be developed which should meet the following criteria:

(1) it should be capable of quantifying disclosure. This should ensure that both financial and non-financial mandatory information relating to a listed company's operations and financial standing, as presented in its annual reports and accounts, would be adequately captured;

(2) it should be capable of being applied with reasonable consistency to all the annual reports and accounts of the companies in the sample;

(3) it should be capable of generating a meaningful, composite single measure of the adequacy of mandatory disclosure in a company's annual report and accounts; and

(4) it should be cost effective in terms of money and time.

The adequacy of mandatory disclosure in the annual reports of the companies listed on the ZSE is captured by evaluating their financial reporting and disclosure practices using a scoring template. Put differently, adequate disclosure is measured by the extent to which listed companies adhere to the disclosure regulatory requirements of the stock exchange. This is operationalised as the quantity of mandated information items that a listed company discloses, and the quality by which it discloses the mandated information items in its annual reports and accounts. While the *quantity* refers to the number of items disclosed (the amount of information), the *quality* refers to the degree

of intensity (the detail) by which the required information items are disclosed in the annual reports and accounts. The quality of information is captured by the sub-elements of each of the mandated information items on the disclosure measuring instrument (see Appendix B). The mandatory disclosure items examined consist of 32 information items; disaggregated into 214 sub-items. The disaggregation was done in order to capture the relative intensity of mandatory disclosure in the annual reports and accounts of the companies in the sample.

Measuring Adequate Mandatory Disclosure

A literature review indicates that disclosure adequacy in corporate annual reports has been measured in four different ways by different writers (see Cerf, 1961; Copeland and Fredericks, 1968; Carpenter, Francia and Strawser, 1971; Morris, 1984). The choice of a particular approach to measure adequate disclosure, be it mandatory or voluntary, is influenced by two factors. First, the appropriateness of the technique to the data on hand. Second, and the more important factor, is the research objective of the writer. For the convenience of exposition, these techniques are labelled as: (1) the perceived disclosure-deficiency approach (Buzby, 1974b); (2) the frequency distribution approach; (3) the content approach; and (4) the index approach. Each of these techniques is reviewed, in turn, in the sub-sections following.

Perceived Disclosure-Deficiency Approach

This approach measures the perceived deficiencies in accounting information needs of users of corporate annual reports. It is an indirect way of measuring the adequacy of disclosure. In other words, it assesses if the accounting information needs of the various users of corporate annual reports are being fulfilled by the preparers of these reports. It requires a questionnaire survey of a particular annual report user group.

The purpose of the questionnaire is to elicit the views of the surveyed user group on two dimensional rating scale:

(a) the current state of the art of corporate reporting and disclosure practices; and

(b) the desired (or the expected) corporate reporting and disclosure practices.

Respondents are often asked to evaluate each information item on the two dimensions using a rating scale. The perceived deficiency (or the expectation gap between what users expect and what preparers are releasing for each information item) is, then, calculated by subtracting the rating for (a) (How much is currently disclosed?) from (b) (How much is desired to have been disclosed?). The current reporting and disclosure practices regarding an item of information is deemed adequate if the difference between (a) and (b) is positive (that is, [a] is greater than [b]). It is, however, deficient if the difference is negative (that is, [b] is greater than [a]). This approach was devised and used by Porter (1962)[4], in an attempt to investigate differences in perceived deficiencies in need fulfillment of Americans occupying all levels of managerial positions. It was, however, adopted and introduced to the field of accounting by Carpenter, Francia and Strawser (1971).

The approach is useful in ascertaining the opinions of the various users of corporate annual reports as to the amount, nature and importance of each information item for policy making purposes. It is, however, beset by several problems. First, it is costly in terms of time and money to undertake a questionnaire survey. Second, it may be biased toward the interests of the particular user group surveyed. The informational needs of a particular user group, say financial analysts, may not be representative of the needs of all user groups of corporate annual reports. Finally, the technique can not

[4] This technique was originally developed and used in an earlier study conducted by Porter in the area of applied psychology.

combine the rating of each information item into a meaningful summary (composite) measure that describes the extent of disclosure for each of the sampled annual reports.

Frequency Distribution Approach

As the name suggests, the frequency distribution approach measures the most commonly appearing information items in an entire annual report and accounts. It involves the computation of the frequency of the mandated information items disclosed in the annual reports of companies in the sample. The modal value for each of the mandated information items reveals the diversity of annual report disclosures. This approach was employed by Morris (1984) in an attempt to measure the extent of corporate mandatory disclosure practices in Australia.

The frequency distribution approach is simple, and may be acceptable for dealing with the items of information on individual basis. However, the procedure has several limitations. First, like the perceived disclosure-deficiency approach, it does not yield a single composite score (index) that measures the concept of interest (in the case of this study, the disclosure adequacy). Second, by emphasising modal values the approach ignores the bulk of the data. Finally, in certain situations, a modal value might not be present. Also, in some distributions it is possible to have more than one modal value (that is, bimodal distribution).

The Content Approach

This method assesses the adequacy of information presented in an annual report based on the number of words used to describe an item of information. It is based on "word-frequency contiguity logic" (Frazier, Ingram and Tennyson, 1984). Thus, words that occur frequently are assumed to represent the content of the narrative. Hussey and Hussey (1997, p. 250) describe it as a systematic way of "converting text to numerical variables for quantitative data analysis." This approach was first employed in disclosure

studies by Copeland and Fredericks (1968). Although the content approach offers a number of advantages in qualitative research, it has several problems associated with its use. First, it is less objective. Second, its potential usefulness is limited to the textual sections of corporate annual reports (see, for example, Frazier, Ingram and Tennyson, 1984). Third, it is time consuming and tedious (Hussey and Hussey, 1997). Finally, it assumes that more words mean full disclosure. Cooke (1989c) has argued that this may not necessarily be the case.

The Index Approach

The index approach is a composite model that combines several variables of interest (disclosure items in this study) into a single measure. Thus, the index is constructed through simple accumulation of scores assigned to individual mandatory information items. A review of the measurement literature indicated that the index approach consists of three sub-tasks. The first involves the selection of disclosure items for inclusion in the index. The selected items are used to construct of a measuring instrument. The second task is to determine the rule for relating the disclosure items (component) to the index (composite). Usually, the model is assumed to be additive. The final task is to determine the relative importance of each of the components in the composite. Having done all this, the measuring instrument is then applied to the annual reports of companies in the sample, and the required items disclosed therein are scored. A high (low) score on the index, for example, indicates a high (low) level of reporting and disclosure adequacy.

The actual assignment of scores to each information item disclosed in a sampled annual report requires the making of a basic decision on the part of the researcher. Basically, the decision is whether to give each information item an equal weight in the index or to give them different weights reflecting their relative importance. A weighted

(or differential) index is based on the assumption that the users of corporate annual reports attach different importance to different information items. Hence, this should be reflected in the index by weighting the information items. The weightings are typically achieved by conducting a questionnaire survey where a particular annual report user group, usually the financial analysts, are asked to value each information item based on a Likert-type scale. Each information item is then assigned a mean value based on the questionnaire responses. An information item disclosed in a sampled annual report is then scored on the basis of the mean weight of that item.

The index procedure was first used by Cerf (1961). His ideas were taken up in the 1970's by Singhvi and Deasi (1971), Buzby (1972, 1974b, 1975), Barrett (1976), and Spero (1979). The technique has also been adopted in several studies in the 1980's (see, for example, Firth, 1980a; Wiseman, 1982; Firer and Meth, 1986; Chow and Wong-Boren, 1987; Wallace, 1988, Cooke, 1989a, 1989b, 1989c). The trend continued in the 1990's (see, for example, Tai et al., 1990; Cooke, 1991, 1992, 1993; Ahmed and Nicholls, 1994; Wallace, Naser and Mora, 1994; Wallace and Naser, 1995; Raffournier, 1995; Inchausti, 1997; Wallace, Choudhury and Adhikari, 1997; Patton and Zelenka, 1997).

The index approach has several advantages. First, it is capable of tapping the differences in magnitude of financial reporting by the companies in the sample (see Cooke and Wallace, 1990, p. 94, footnote 16). Second, the index of disclosure not only captures the differences in the disclosure practices of sampled companies, it also rank-orders them. A company's disclosure index, for example, suggests its relative disclosure *vis-à-vis* other companies in a sample. Third, because scores on an index can be treated as a parametric and non-parametric data set, the index approach affords researchers the possibility to carry out suitable statistical and econometrics analyses (Cooke and Wallace, 1990). For instance, as noted earlier, several prior disclosure

studies that employed the index technique have investigated relationships between the scores and certain corporate attributes such as company size, listing status and industry-type (see, for example, Cerf, 1961; Singhvi and Desai, 1971, Cooke, 1989a, 1989b; Wallace, Naser and Mora, 1994; Inchausti, 1997).

In spite of the above advantages and its persistent use, the index technique is beset by several problems. The first is that there is a possibility of some element of subjectivity entering into the scoring process. For example, the discretion which a researcher exercise in ascertaining whether or not an undisclosed information item is applicable to the reporting company. This generally involves subjective judgment on the part of the researcher. In their review article, Marston and Shrives (1991) appreciate this potential problem, but argue, however, that measuring information disclosure in corporate reports cannot be done in a more precise scientific way. They suggest, however, that researchers in this area should be aware of this possibility and make every effort to minimise the problem. A review of the literature indicates that researchers in this area, in one way or another, have designed their studies in such a way that objectivity is enhanced.

Another limitation of the index approach is that companies which differ significantly on the information item released may earn similar scores if the number of sub-items released are the same, even though they have reported differently on the main disclosure items. It can be argued, however, that since there are more than one information item, one can not expect all the companies scoring, say 55, on the index to be similar in their disclosure practices.

After a careful consideration of the relative merits, demerits, and the appropriateness of each of the alternative disclosure measuring techniques reviewed above, and the need to provide explanations for the revealed corporate reporting behaviour, the index approach was considered to be the most suitable approach for this

study. Consequently, this approach was employed in this study to measure the extent of mandatory annual report disclosure practices of the companies in the sample.

Summary

This chapter has examined the conceptual, contextual, and operational definitions of adequate disclosure. It has also reviewed a number of techniques for measuring disclosure in corporate annual reports and accounts, and in particular, how it was measured in this study. Although the index technique, like all other research devices has its limitations, it has extensively been used in this area of research, and is considered to be the most appropriate for this study which seeks to capture systematic differences in corporate mandatory disclosure. In a review article, Marston and Shrives (1991) concluded that the index approach is a useful research tool that has come to stay.

CHAPTER VII

DEVELOPMENT AND FORMULATION OF TESTABLE HYPOTHESES

Observing and trying to interpret what we observe is a native human activity.
Babbie (1994, p. 3)

To investigate scientifically the research questions posed in Chapter I the relationships between the variables involved need to be theorised to develop testable hypotheses. This chapter theories the implications of: (1) the stringency of a disclosure regulatory regime for mandatory disclosure practices; and (2) the differing nature of corporate attributes for mandatory disclosure practices (or compliance with mandatory reporting requirements). Specifically, the discussion in this chapter concentrates on the development of a testable hypothesis for the second research question and eight others for the third research question.

The main objective of theorising and testing empirically the association between mandatory disclosure and corporate attributes is to suggest areas where efforts to improve the disclosure regulatory regime should be concentrated. The empirical analyses were based on an aggregative procedure. This aggregative approach enabled me to examine whether mandatory disclosure practices are a function of corporate attributes, in aggregate form, and to fulfil my promise to those companies responding to my call for additional data, of treating their responses confidentially and ensuring their anonymity.

According to the literature on corporate financial reporting and disclosure, several corporate attributes influence the extent to which listed companies comply with mandatory disclosure requirements. However, only eight of these were relevant to the socio-

economic environment of Zimbabwe, and were accordingly selected for testing. They were selected on the basis of the following criteria. First, the attribute should be likely to associate with mandatory disclosure either on *a priori* assumption or on theoretical consideration. The attribute should also have been shown empirically to be associated with a company's compliance level with mandatory disclosure requirements. Second, it should be easily measured for the purpose of statistical analysis. Third, the attribute should be able to facilitate the classification of the sample companies into groups without ambiguity, if it is categorical in nature. Finally, data should be available on that corporate attribute. The selected corporate attributes are: (1) company size, (2) quality of external audit, (3) ownership structure of issued equity shares, (4) type of industry, (5) company age, (6) multinational corporation (MNC) affiliation, (7) profitability, and (8) liquidity.

Testable Hypotheses

This section develops and formulates testable hypotheses regarding stringency of disclosure regulatory regime, and how each of the identified corporate attributes above relates to mandatory disclosure.

Hypothesis 1: "Stringency" of Disclosure Regulatory Regime

As noted in Chapter V, the extent to which disclosure regulatory rules are complied with by listed companies depends on the stringency of the regulatory regime (see also, Adhikari and Tondkar, 1992, note 1; Frost and Pownall, 1994, p. 79). Thus, a company's disclosure behaviour depends on the monitoring and enforcement practices of the stock exchange on which it is listed. The above statement pre-supposes that the extent to which disclosure requirements of stock markets are complied with by listed companies vary from market to market, because of differences in the stringency of regulatory regimes. The differences in the stringency of regulatory regimes are the consequences of the

differences in culture, politics, legal, and institutional frameworks of regulators' environment (see Adhikari and Tondkar, 1992). In view of these environmental differences no one system of regulation is superior to others (Benston, 1980).

Besides the stringency of the regulatory regime, a literature review suggests that disclosure compliance levels on stock markets are also affected by two other factors. First, the competitive pressure associated with raising of capital on a market may affect the extent to which listed companies adhere to disclosure rules (see Choi, 1973a; Meek and Gray, 1989; Gray, Meek and Roberts, 1995). The second factor is a company's regulation compliance culture.[1] Thus, a company's attitude to and perception of regulation may affect its compliance level. Jenkinson (1996) delineates three possible states of corporate compliance culture in the financial services industry. They are: (1) non-compliance culture; (2) negative (or anti-) compliance culture; and (3) positive (or pro-) compliance culture. Although Jenkinson regulatory compliance culture classification relates to corporate responses to regulation of the financial services industry, it is equally relevant to the analysis of corporate responses to disclosure regulation. In a non-compliance cultural state, a regulated company does not recognise the need to comply with the disclosure regulatory requirements. Because of this perception of regulation, the regulated company frequently breaches the regulatory rules, and it is more pronounced in regimes where sanctions for non-compliance are laxly applied. In an anti-compliance culture, a regulated company merely tolerates compliance, and generally sees it as a threat. In this compliance cultural setting, the rules are not actually breached, but the probability of non-compliance is high. A company in this state will adhere to regulations if, and only if, the marginal revenue of compliance is more than the marginal cost of compliance. Compliance with

[1] According to Diver (1980, p. 297), companies comply with regulations for various reasons including moral or intellectual commitment to the underlying regulatory objectives; pressure from peers, competitors, customers, employees; conformity with a law-abiding self image; and fear of detection and punishment.

regulation is considered by such companies as a drain on resources that have more profitable alternative uses. In a pro-compliance culture, however, the regulated company identifies compliance with regulation as an opportunity, and is therefore receptive to regulation. Such a regulated company believes that the regulatory rules are desirable, practical, and just. The regulated company accepts compliance as a natural outcome of its operations. It accepts the truth of the general expression: "good compliance is good business" (Jenkinson, 1996).

Although these factors may simultaneously affect the levels of compliance in any given regulatory environment, it is contended here that the last two factors will affect compliance levels voluntarily as they depend more or less on management discretion. In other words, holding these two factors constant, compliance level is more likely to be affected by the stringency of the regulatory regime.

The more stringent the disclosure regime imposed by a stock market and/or the regulatory agent on listed companies, the more adequate mandatory information the companies will provide in their annual reports and accounts. Adequate disclosure of mandated information can only be a result of a rigorous enforcement and monitoring efforts of a stock market, and the existence of potential sanctions for failing to conform to disclosure regulatory requirements.[2] Elaborate disclosure requirements are not enough, it is the continuous enforcement and monitoring practices of the regulatory agent that are essential. It follows that in a more stringent disclosure environment, one should expect no non-compliance with regulation or discover that there is only an insignificant disclosure gap (that is, little or no difference between the expected/desirable disclosure and actual disclosure practice). A lack of non-compliance with regulation is an ideal case, and it is

[2] The regulatory economics literature argues that the imposition of stricter standards can lead to higher non-compliance without higher penalties, and greater enforcement efforts (Harford, 1978; Viscusi and Zeckhauser, 1979; Kambhu, 1989). Kambhu (1989, p. 108ff, appendixes 2 and 3) has, however, proved that higher penalties cause compliance to fall, but not greater enforcement efforts.

therefore less likely to be attainable in practice even on developed markets such as the NYSE, and the LSE.[3] The analysis above motivates the following hypothesis:

> Hypothesis 1: ***Ceteris paribus**, there is no mean difference between the extent to which companies listed on the ZSE comply with the mandatory disclosure requirements, and that expected of them under the 1994 disclosure regulatory regime.*

This null hypothesis is statistically formulated as:

$$H_o1 : \mu_{\text{EXPECTED}} = \mu_{\text{OBSERVED}}$$

where μ_{EXPECTED} and μ_{OBSERVED} represent the means of the distributions of the expected and the observed disclosure compliance levels respectively.

Hypothesis 2: Company Size and Mandatory Disclosure

The second proposition is that on average the extent of mandatory disclosure practices is positively associated with corporate size. This proposition is motivated by several economic theory, rationalisation, and supported by empirical evidence from prior research by other scholars. Several of these are considered here. First, due to possible economies of scale in the production and storage of information, large companies tend to allocate relatively greater amount of resources to the production of information (Stigler, 1961; Alchian, 1969). Generally, large companies tend to be multi-product business entities; operating over wider geographical areas with several divisional units. Consequently, central management of such companies will require internal information system which will enable them to make operational and strategic decisions concerning the divisions, and to ensure that the divisions are performing adequately in pursuit of overall corporate objectives. Since there is an information system already existing for mass

[3] Several research studies have documented evidence of non-compliance of regulatory standards on these markets (see, for example, Frost and Pownall, 1994; Alford, Jones and Zmijewski, 1994; Schwartz and Soo, 1996; Frost and Kinney, 1996).

production and circulation of data for internal purposes, the incremental cost of supplying non-proprietary data to the public is likely to be minimal (Dye, 1985b, 1986, 1990). The general expectation that the costs of production tend to decrease as company size increases underlie much consideration regarding the extent to which small companies can be expected to comply with rules. Indeed, in most cases, small companies are exempted by regulators from complying with certain statutory disclosure requirements. Atiase, Bamber and Freeman (1988) report evidence related to cost-benefit arguments that have been cited in support of size-based disclosure requirements in the US.

Second, the extent of detail provided on mandatory disclosure by a company will depend on the marginal benefit it derives from the disclosure. If the marginal benefit of disclosure will be less than the marginal cost of doing so the company will disclose as it is a regulatory requirement, but it will be less in detail. If, on the other hand, the marginal benefit exceeds or at least equal to the marginal cost, the extent of the detail will be higher. The argument advanced by Buzby (1975, p.19) supports this proposition. He argued that disclosure in great detail puts small companies in competitive disadvantage with their large counterparts in the industry.[4] This suggests that the opportunity cost of mandatory disclosure is higher for small companies than for large companies. They may, therefore, disclose less information than large companies.

The third factor which relates to the opportunity cost of disclosure is that of the out-of-pocket (direct) cost of complying with disclosure requirements. Since gathering, generating, and disseminating of information are costly activities, small companies may not be able to afford such costs from their resource base. Salamon and Dhaliwal (1980) present evidence that the direct of cost of complying with the US SEC's 10-K filing

[4] Stevenson (1980, pp. 9-11) provides categories and examples of information, which if disclosed, might create competitive disadvantages. They include information about technological and managerial innovation (for example, production processes, quality-improvement techniques); strategies (planned product development); and about operations (for example, segment sales and production cost figures).

requirements is relatively higher for small companies than it is for large companies. Hence, smaller companies may disclose less than their larger counterparts. Fourth, it has been established that adequate disclosure by a company reduces its cost of capital[5] (Choi, 1973b; Elliott and Jacobson, 1994), and since large companies rely more heavily on the securities market for external financing of their operations than smaller companies (Shapiro and Wolf, 1972; cited in Salamon and Dhaliwal, 1980, p. 559), it follows that large companies are more likely to have extensive disclosure than small companies.[6]

Finally, empirical evidence confirms the hypothesised positive relationship between company size and the extent of disclosure (see, for example, Cerf, 1961; Singhvi and Desai, 1971; Firth, 1979b; Wallace, 1987, 1988; Cooke, 1989a; Wallace, Naser and Mora, 1994; Wallace and Naser, 1995; Salter and Niswander, 1995; Inchausti, 1997; Patton and Zelenka, 1997). It must be stressed that it is not the size of a company *per se* that causes the disclosure differential among companies. However, as pointed out by Salamon and Dhaliwal (1980, p. 559) and Marston and Shrives (1991, p. 205), it appears that large companies have underlying economic reasons for increased mandatory disclosure than small companies.

The testable hypothesis that arises from the above theoretical and empirical evidence is stated in the null form as:

> Hypothesis 2: ***Ceteris paribus**, the extent of mandatory disclosure by companies in the sample does not associate with their size.*

This is statistically expressed as:

$$H_o 2 : \rho_2 = 0$$

[5] Priebjvirant (1991) presents a contrary evidence in Thailand. His findings do not support the hypothesised relationship between levels of disclosure and costs of capital as measured by both beta and total risk.

[6] Gibbins, Richardson and Waterhouse (1990) find, based on experience survey and focused interview approaches, that the frequency with which companies issue securities influences their disclosure policies.

where ρ_2 represents the correlation coefficient between company size and mandatory disclosure.

Hypothesis 3: Quality of External Audit and Mandatory Disclosure

It is suggested that external auditors play a major role in the disclosure policies and practices of their clients. Specifically, the analyses by Benston (1980, p. 56) and DeAngelo (1981a) indicate that audit quality is influenced by the size of the external auditing firm. DeAngelo (1981a), for instance, argues that the value of an external audit depends on how users perceive auditors' report in corporate annual report. The perception is formed on the basis of users' understanding of both the auditor's ability to discover a material error (auditors' technical capabilities), and the auditor's willingness to properly report the error (auditors' independence). She contends further that holding technical capabilities for all audit firms constant, larger audit firms are more likely to lose for not reporting a mis-statement or an error. DeAngelo (1981b) and Fama and Jensen (1983b) suggest two reasons why larger audit firms have a competitive advantage in reporting mis-statement and non-compliance of mandatory reporting rules. First, since large audit firms have many clients, their economic dependency on a particular client is minimal. Thus, large audit firms have greater incentives to maintain independence from their clients. Hence, they are more likely to report any mis-statement and errors, and to assure compliance by their clients with statutory and regulatory reporting rules. The results of the statistical tests of a recent study by Raghunathan, Lewis and Evans (1994) confirm this hypothesised relationship.

The second reason is that large audit firms have more to lose than smaller audit firms in terms of damages to their reputation (brand name). Consider the following example: if an auditor succumbs to the pressures of a particular client and it is discovered later, the value of that auditor's services to other existing clients would be reduced. This

may lead to the demands by the existing (and prospective) clients for lower fees or change of auditors. This is because users of corporate annual reports would heavily discount annual reports certified by that auditor to reflect the reduced value of its services. It follows that the more clients an auditor has, the greater the losses from damages to its reputation. Consequently, large audit firms have greater incentives to resist client pressures for lax application of auditing and reporting standards.

Another plausible factor may be that large audit firms have greater potential exposure to legal liability. This is because external auditors are liable for losses arising out of fraudulent or misleading certified annual reports (Benston, 1975; Causey, 1979). In addition, large audit companies tend to have more collective wealth among their partners. Since investors are more likely to rely on annual reports certified by large audit firms, and to sue for negligence or misconduct on the part of the audit firm, large audit firms have greater incentives to conduct their audit with due diligence.

Furthermore, the findings from Wright's (1983) study also corroborate this hypothesis. Wright presents evidence on auditors' differential preference to disclosure. He studied the disclosure attitudes of various-sized audit firms and found significant differences in preferences. While large audit firms favour adjustment, small firms favour footnote disclosure. This implies that large audit firms are more inclined to adhere to statutory and regulatory rules than small audit firms as an adjustment is more likely to affect prior, current or the next financial year's transaction, while footnote disclosure affects only the current year.

Finally, positive relationships between the extent of disclosure practices and the quality of external audit have been reported by several studies (for example, Cerf, 1961; Singhvi and Desai, 1971; and Patton and Zelenka, 1997). However, the hypothesised relationship was not supported in studies conducted by Singhvi (1968), Tai et al. (1990), and Malone, Fries and Jones (1993). Wallace, Naser and Mora (1994) also reported that

audit quality, measured by the type of external audit company, does not significantly associate with the comprehensiveness of disclosure in Spain.

Drawing on these economic arguments and the empirical evidence, it appears reasonable to hypothesise, in the null form, that:

> Hypothesis 3: ***Ceteris paribus**, there is no difference between the mean extent of the mandatory disclosure practices of companies audited by large audit firms, and those audited by small audit firms.*

This is statistically expressed as:

$$H_o 3 : \mu_{\text{BIG-2}} = \mu_{\text{NON-BIG-2}}$$

where $\mu_{\text{BIG 2}}$ and $\mu_{\text{NON-BIG-2}}$ represent the means of mandatory disclosure scores of companies audited by large and small audit firms respectively.

Hypothesis 4: Ownership Structure and Mandatory Disclosure

The distribution of the ownership of a company's outstanding equity shares has a significant influence on it's mandatory disclosure practices. Thus, it is assumed that a wider dispersion of share ownership of a company is associated with it's compliance with mandatory disclosure rules. This proposition is explained in terms of positive (agency) theory of accounting because modern companies are characterised by a separation of ownership and control. This arrangement generates agency costs resulting from conflicting interests between management, and owners and across classes of owners (Jensen and Meckling, 1976; Fama and Jensen, 1983a). Agency costs tend to be higher for companies with a widespread public ownership of securities, therefore, shareholders of such companies press for more adequate information for monitoring purposes (Watts, 1977).

The complementary view asserts that professional managers of such companies have greater incentives to engage in bonding activities to reassure shareholders that they

will be acting in their interest. The provision of "adequate" information to shareholders through the annual report is one element of bonding activities.[7] Since management probably already produces much of the desired information for internal decision making purposes, the marginal cost of making this information available to outside users is likely to be lower than for other alternatives. Hence, the tendency for a company with greater number of public individuals on its share register (high agency costs) to adequately disclose information in its annual report is more likely to be high.

In contrast, however, in countries where the state (for example, China), banks (for example, Germany and Japan) or certain families (for example, Hong Kong) have substantial equity holdings or where equity ownership is highly concentrated, there is generally little or no physical separation between those who own, and those who manage the capital. In such cases, capital owners have greater access to internal information of the company, and may not have to rely, to a greater extent, on public disclosure to monitor their investments. Thus, demand for adequate disclosure and reporting is generally low in such situations.

There does exist, however, a contrary view to the explanations offered by agency theorists outlined above. As analysed by Zeckhauser and Pound (1990), this view suggests that dispersed individual shareholders are not concertedly formidable to influence corporate outcomes including disclosure policies and practices, even if the net benefits are great enough to provide significant incentives to become informed. Relying on empirical evidence of the impact of an arrival of a large shareholder (defined as a single entity owning 15 per cent or more of the outstanding voting stock) on a company's share, they argued that the presence of a large insider shareholder solves the fundamental problems of

[7] Jensen and Meckling (1976) and Watts (1977) provide examples of bonding contracts that mitigate the manager-shareholder conflicts of interests such as contractual guarantees to have annual accounts audited, contractual limitations on managers decision making power, and management compensation plans.

outside claim holders in monitoring corporate management. Thus, large shareholders are effective corporate monitors. This, in turn, implies that where share ownership is more widely-dispersed, individual public shareholders do not have the same bargaining power *vis-à-vis* the company to access internal information of the company. In other words, it is often difficult to organise very diffused ownership interests into an effective instrument to monitor management. It follows that the claim and the presumed empirical observation that companies with dispersed ownership have superior disclosure is suspect.

A review of the literature indicates that the impact of share ownership structure on the "adequacy" of mandatory corporate disclosure has not really been studied. Singhvi (1968, p. 37) initiated an empirical investigation in this respect, but due to lack of data (76 per cent of his sampled companies did not disclose the number of shareholders in their annual reports) the relationship between the quality of disclosure and share ownership distribution was not studied in detail. This was taken up again in Singhvi and Desai (1971), but the number of shareholders was used as a proxy for company size, rather than, as a measure of share ownership pattern (see, also Wallace, 1987). However, there are three related studies known to the present investigator that have examined the association between equity ownership structure and voluntary disclosure (Ruland, Tung and George, 1990; Craswell and Taylor, 1992; Hossain, Tan and Adams, 1994). The findings of these studies are, however, mixed. Ruland, Tung and George (1990) examined managers' incentives to disclose forecasts of future earnings. Using a multivariate statistical analysis, they found that ownership structure is more closely associated with the decision to release information on future earning forecasts. Hossain, Tan and Adams (1994) report a similar result with companies listed on the Kuala Lumpur Stock Exchange. On the other hand, Craswell and Taylor (1992) found no significant mean difference between Australian gas and oil companies that disclose reserves and the control group for spread of shareholding. The findings of these studies may not be universally applicable. This is because Ruland,

Tung and George's (1990) study focused only on one disclosure item (earning forecasts), while Craswell and Taylor's (1992) was industry-specific (oil and gas companies). Similarly, the results of Hossain, Tan and Adams (1994) may not be generalisable to other countries as it is based on Malaysian context. The studies reviewed here suggest direct testing of the following relational hypothesis in the null form:

> Hypothesis 4: ***Ceteris paribus**, the proportion of a company's shares held by insiders does not associate with the extent of its mandatory disclosure.*

Statistically expressed as:

$$H_o 4 : \rho_4 = 0$$

where ρ_4 represents the correlation coefficient between equity share ownership structure and mandatory disclosure.

Hypothesis 5: Industry-Type and Mandatory Disclosure

The level of mandatory disclosure in corporate annual reports are not likely to be the same across different business sectors. Sprouse (1967) stated that accounting policies and techniques may vary by industry. Gonedes (1972) added that "the accounting figures issued by any company reflect the events that impinged upon the company's operations." The events may be specific to a particular industry; or even specific to that company. This may be due to a number of factors. First, certain industries are highly regulated due to their overall contribution toward a country's export earnings or national income. They are, therefore, subject to rigorous controls. It is possible that the regulation may affect the disclosure and reporting practices of the companies in this industry.

Second, companies in certain business sectors may have difficulties in reporting adequately due to the nature of work involved. For instance, companies in the oil industry may have serious problems in accounting for and reporting depreciation, depletion and

exploration of oil wells. Finally, disclosure differential may also be associated with the type of product line or the diversity of products of the companies in an economy. These specific industrial characteristics (or patterns) may manifest in different ways. A consumer-product company may be particularly concerned with its public image, and as such may tend to comply with all mandatory rules. Similarly, a company that deals in multi-products may have more information to share than one with a small line of products.

The association of the industry-type variable and mandatory disclosure is partially supported by empirical evidence. Stanga (1976) found industry-type to be a significant factor accounting for the differences in the disclosure levels of the companies in his sample. This result is strongly supported in a recent study by Fekrat, Inclan and Petroni (1996) who found significant variations among companies, in different industries, on the extent of disclosure on environmental issues in corporate annual reports. They noted that businesses in the forestry industry show high level of disclosure than those in the motor and pharmaceutical industries. Tai et al. (1990), however, found no evidence of an association between business sector and the level of mandatory disclosure in Hong Kong. Cooke (1992) also found no association between industry-type and mandatory disclosure, but observed differences with respect to voluntary disclosure in Japan. Similarly, Patton and Zelenka (1997) found that the extent of disclosure of companies in the financial or manufacturing industries in the Czech Republic was not different from other companies in their sample. Since the empirical evidence is inconclusive, and there is also no *a priori* assumption to indicate which of the industries will comply with mandatory rules, as far as Zimbabwe is concerned, the industry-type hypothesis is, thus, stated in the null form as:

> Hypothesis 5: ***Ceteris paribus**, the extent of mandatory disclosure of companies is the same irrespective of the industry to which they belong (whether they are conglomerates, manufacturing, mining, or others).*

Statistically, this is expressed as:

$$H_o5: \mu_{CONGLO} = \mu_{MANUF} = \mu_{MINING} = \mu_{OTHERS}$$

where μ_{CONGLO}, μ_{MANUF}, μ_{MINING}, and μ_{OTHERS} represent the means of the mandatory disclosure scores of the companies which are conglomerates, manufacturing, mining, and others respectively.

Hypothesis 6: Company Age and Mandatory Disclosure

A company's mandatory disclosure practices may be influenced by its age (stage of development and growth). Thus, older, well-established companies are more likely to disclose much more information in their annual reports than younger companies. There are three factors that may contribute to this phenomenon. First, younger companies may suffer competitive disadvantage if they disclose certain items such as information on research expenditure, capital expenditure, and product development. The competitive disadvantage arises when the information disclosed by the newly established companies are used to their detriment by the older competitors. On the other hand, older companies may naturally be motivated to disclose such information as their presentation may not hurt their competitive position. Second, the cost and the ease of gathering, processing, and disseminating the required information may be a contributory factor. These are more likely to be more onerous to younger companies than their older counterparts.

Finally, younger companies may lack a "track record" to rely on for public disclosure. This is explained by the fact that some companies are formed through acquisition or merger of existing companies, while others are formed from scratch. Companies formed from scratch would not have any past operating histories of their own. Such new companies may have less incentive to disclose more information.

In spite of the above reasons, the hypothesised relationship was, however, not supported in Henderson (1969). Henderson attempts to isolate the factors that may cause

differences in financial disclosure in corporate annual reports in the US and Canada. He found no significant relationship between company age, measured in years since incorporation, and disclosure. Henderson's (1969) study, however, has a major limitation which he stressed in discussing his results. The entire study was based on whether or not a company disclosed six items of information. These items are hardly representative of information items required to be disclosed in corporate annual reports.

To test the external validity of Henderson's conclusion, and the fact that the companies listed on the ZSE have different ages and different histories -- some were once managed by UK companies, others were not so managed, it is hypothesised in the null form that:

> Hypothesis 6: ***Ceteris paribus**, a company's age does not associate with the extent of its mandatory disclosure practices.*

Statistically, this is expressed as:

$$H_o 6 : \rho_6 = 0$$

where ρ_6 represents the correlation coefficient between company age and mandatory disclosure.

Hypothesis 7: MNC Affiliation and Mandatory Disclosure

It is assumed that a company's mandatory disclosure policies and practices are influenced by its affiliation with a MNC. The reasons for the assumed association are not far-fetched. First, because of MNCs' direct financial investment in their subsidiaries in emerging economies, the former tend to demand a greater amount of information from the latter. Thus, accountability and information disclosure by subsidiaries is often a direct response to the foreign direct investment by MNCs. The parent companies may require more detailed information to evaluate the performance, and prospects of their subsidiaries.

Second, the political costs of subsidiaries of MNCs are relatively high. The performance, behaviour, and consequences of the operations of MNCs are frequently monitored, evaluated, and analysed. Many governments directly or through international inter-governmental organisations such as the United Nations, the Organisation for Economic Co-operation and Development, and the Southern Africa Development Community, demand much more information from MNCs to serve as a basis for policy formulation. This is partly explained by the important economic role MNCs play in the development of their host countries and in the world trade. They produce most goods and services, and provide primary, secondary and tertiary employment by making use of society's scarce resources. The relatively high level of local economic activities under the control of foreign MNCs has led to political pressure for the social control of these entities, and their local subsidiaries in emerging economies. In fact, MNCs are regarded as sources of exploitation and agents of western imperialism (Kobrin, 1978, p. 240). The control of the local activities of these MNCs is partly also due to the alleged frequent abuse of corporate power by some MNCs. Several MNCs have been accused by their host countries of tax avoidance through transfer pricing, tax evasion, circumventing exchange controls, and discriminatory practices. To improve their bargaining powers with their host countries, MNCs tend to require detailed information on the operations of their subsidiaries. Also, because of high political costs, MNCs are more likely to insist on full compliance with all statutory and regulatory requirements of the host countries by their subsidiaries.

Finally, foreign direct investments by MNCs is often accompanied by technology transfer, including the accounting and disclosure practices at home, to their subsidiaries in emerging economies. This transplantation of foreign technology has facilitated creativity and innovation in the operations of their subsidiaries relative to other local companies that are not so affiliated. As a consequence, these subsidiaries are more likely to have more

sophisticated financial reporting systems that facilitate greater disclosure in their annual reports. There is a need to empirically confirm or otherwise of this assumption. The MNC hypothesis is, therefore, stated in the null form as:

> Hypothesis 7: ***Ceteris paribus**, there is no difference between the mean extent of mandatory disclosure by companies that are affiliated with multinational corporations, and those that are not affiliated with multinational corporations.*

Statistically expressed:

$$H_o 7 : \mu_{MNC} = \mu_{NON-MNC}$$

where μ_{MNC} and $\mu_{NON-MNC}$ represent the means of the mandatory disclosure scores of companies affiliated to MNCs, and those that are not affiliated to MNCs respectively.

Hypothesis 8: Profitability and Mandatory Disclosure

Profitability has been identified in prior disclosure studies to be associated with the extent to which companies disclose mandatory information items in their annual reports (for example, Cerf, 1961; Singhvi, 1968; Singhvi and Desai, 1971; Wallace and Naser, 1995; Inchausti, 1997; Patton and Zelenka, 1997). Several arguments have been advanced to support this proposition. For example, Cerf (1961), Singhvi (1968) and Singhvi and Desai (1971) argued that profitability is a measure of management performance, and as such the management of a profitable company is likely to disclose more information to support the continuance of their positions, and performance-related compensatory schemes that may be due to them. Inchausti (1997) employing signalling theory states that management when in possession of good news due to better performance are more likely to disclose more detailed information to the stock market to avoid undervaluation of their shares. It can also be argued, however, that unprofitable companies will also be inclined to release more information in defence of poor performance. Indeed, Lang and Lundholm (1993, p. 250) note that the association of a company's profitability level and disclosure

can be positive, neutral or negative depending on its performance. In view of Lang and Lundholm's observation, it is hypothesised in the null form that:

> Hypothesis 8: ***Ceteris paribus**, a company's profitability level does not associate with the extent of its mandatory disclosure practices.*

Statistically, this is expressed as:

$$H_o 8 : \rho_8 = 0$$

where ρ_8 represents the correlation coefficient between company profitability level and mandatory disclosure.

Hypothesis 9: Liquidity and Mandatory Disclosure

It is hypothesised that a company's liquidity level is an explanatory factor for the variation in the extent of its mandatory disclosure practices. According to Wallace and Naser (1995), regulatory bodies as well as investors and lenders are particularly concerned with the going concern status of companies. In view of this, companies that are able to meet their short-term financial obligations without a recourse to the liquidation of their assets in place have incentive to make this known through disclosure in their annual reports and accounts (Belkaoui and Kahl, 1978). While the results of the statistical test performed by Belkaoui and Kahl (1978) support this hypothesised relationship between disclosure and liquidity, those of Wallace and Naser's (1995) study did not. To provide further empirical evidence in either direction, it is hypothesised in the null form, as follows:

> Hypothesis 9: ***Ceteris paribus**, there is no difference between the mean extent of mandatory disclosure of companies which are liquid and those which are not.*

This is statistically expressed as:

$$H_o 9 : \mu_{\text{LIQUID}} = \mu_{\text{ILLIQUID}}$$

where μ_{LIQUID} and μ_{ILLIQUID} represent the means of mandatory disclosure scores of companies which are liquid and those which are not respectively.

Summary

In this chapter, nine testable hypotheses; one on the relationship between disclosure compliance level and stringency of the disclosure regulatory regime, and the other eight on the relationships between a number of identified corporate attributes (namely, company size, external audit quality, ownership structure, industry-type, company age, MNC affiliation, profitability and liquidity) and adequate mandatory disclosure have theoretically been developed, in the context of Zimbabwe, and formulated for statistical testing.

CHAPTER VIII

DATA COLLECTION AND SAMPLING METHODS

> This was an unexpected piece of luck. My data were coming more quickly than I could reasonably have hoped.
> (The Musgrave Ritual, quoted in Casley and Lury, 1981, p. 130)

To test the hypotheses developed in the previous chapter it was essential that information on the companies listed on the ZSE be obtained. This chapter outlines the procedures employed to obtain a sample of companies used as the unit of analysis of this study. It also presents descriptive statistics on the sample of companies examined. Apart from the data obtained or computed from the annual reports and accounts of the sample companies, several others were also used in this study. The sources of these other data are mentioned at the first point of use.

Selection of Target Population

The IFC's Emerging Markets Database was consulted as a starting point to identify equity stock markets in Africa, and the number of companies listed on each. I approached relatively developed stock exchanges in four anglophone African countries, namely South Africa (in Johannesburg), Nigeria (in Lagos), Ghana (in Accra), and Zimbabwe (in Harare) for data and access to their library. Only the ZSE responded favourably.[1] The favourably response from the ZSE offered me its co-operation and support which were crucial to the successful completion of the study as the examination

[1] A permission to use the ZSE for this study was granted by the late Mr. N. G. Bown, the then Administrator of the ZSE.

of certain confidential documents of the stock exchange was necessary for the evidence sought. Such documents can only be accessed if a cordial relationship existed between the officials of the stock exchange and the present investigator. This support was also necessary as I am not a national of the Republic of Zimbabwe, and had no prior relationship with that stock exchange. It is the willingness of the ZSE to grant me access to their library and data which prompted my choice of companies listed on that stock exchange as target population.

The ZSE was contacted by post for the names and postal addresses of all companies on its Official List. Due to the relatively small number of companies listed on the market, all the companies in the population were contacted by post for a copy of their audited annual reports and accounts for the financial year ending in 1994. Unlike the US, the UK and several other countries, data on companies listed on the ZSE including their annual reports and accounts are not available in magnetic format and databases. Therefore, requesting the ZSE listed companies to forward copies of their annual reports and accounts to me was the best and the quickest means of accessing these important data. The letter requesting copies of the annual reports and accounts explained the purposes of the study and guaranteed respondent anonymity. It also assured respondents that any information they may offer would be treated as confidential. The request for the 1994 corporate annual reports and accounts was influenced by two factors. First, the 1994 annual reports and accounts were the most recent data available on the listed companies at the start of the study at the Queen's University of Belfast in September of that year. The second factor was that Zimbabwe experienced a severe drought in 1992 which adversely affected the entire micro- and macro-economic structures of the country. The Zimbabwe economy showed signs of recovery during the latter half of 1993. Since compliance with legal and regulatory requirements entails costs, it was assumed that the listed companies may adopt selective

disclosure strategy during this period. The use of a selective disclosure strategy would arise when compliance with legal and regulatory requirements is limited to only significant matters. In such a situation, any attempt to capture disclosure adequacy in corporate annual reports and accounts will not be representative of the normal practice.

Sample Design and the Sample

The request for the annual reports and accounts was met with a remarkable favourable response from the companies listed on the market. Some sent their audited annual reports and accounts to me through DHL International and other courier service operators. Thirty-five companies responded to the first mail request. A follow-up letter was sent to the remaining 29 companies listed on the market that have not responded at the end of the fourth month following the initial mailing. A cut-off period of six months, commencing from the month in which the initial request was made, was imposed after which it was considered that a listed company was not interested in obliging this researcher. Fifty-six companies, out of the 64 listed on the ZSE, responded with their 1994 audited annual reports and accounts at the end of this period. Some of these companies were de-selected for reasons explained in the next paragraph.

The following steps were used in the sample selection process. First, companies which were not listed on the stock market for more than a year were eliminated. This was based on an assumption that the full impact of the disclosure requirements of the stock exchange on the financial reporting practices of a listed company can only be assessed realistically if that company had been listed on the market for, at least, over a year. On the basis of this assumption, two companies which listed on the ZSE in 1994 were eliminated. This step resulted in 54 companies surviving. The second criterion was the elimination of companies which are registered under the Banking Act (Chapter 188). This is because Part III of the Seventh Schedule to the Companies Act of 1952

(Chapter 190) exempts any company registered in Zimbabwe as a commercial bank, an accepting house, a discount house or a financial institution in terms of the Banking Act from complying with certain requirements of Part I of this schedule. This part of the Seventh Schedule contains the details of the accounting requirements of the Companies Act. Hence, to ensure uniformity in the annual financial reporting practices of the sample, five of these companies were de-selected. This resulted in a final sample of 49 companies which represents about 77 per cent of the total population of listed companies as of December 1994. Table 8.1 reports the summary of the sample design.

Of the 49 companies in the final sample, 22 (44.9 per cent) are among those whose securities constitute the base for the IFC's Global Zimbabwe Index. They (the 22 companies in the sample) represent about 89 per cent of the total market capitalisation of this IFC's index (US$1,249.87 million) as of February 1995 (IFC, 1996).

Table 8.1

Summary of sample selection criteria

Description	No. of listed companies	Proportion of the total population %
Companies with equity shares on Official List of the market as at 31 December 1994	64.0	100.00
Companies on the Official List that responded to my request for their 1994 annual reports and accounts	56.0	87.50
Deduct:		
Companies that first listed in the last quarter of 1994	2.0	3.10
Companies in the banking, insurance, and other financial services industry	5.0	7.81
Companies with usable data (that is, the sample size)	49.0	76.56

The industrial composition of the sample, and its relationship to the entire population of companies that were listed on the stock market as at 31 December 1994 is

reported in Table 8.2. The final sample consists of a broad cross-section of the mining, manufacturing, transport, and commercial companies listed on the ZSE. Shares of 86 per cent of companies in the sample were constituent of the market's industrial index. About the same percentage of companies in the sample was also a constituent stock of the mining index.

Table 8.2

Relationship between the sample and the population by industrial composition

Market index	Population size		Sample size		Proportion of sample to the population
	No.	%	No.	%	%
Industrial:					
Financial institutions and state enterprises	7	11.0	0.0	0.0	0.0
Commercial and industrial concerns	50	87.7	43.0	87.8	86.0
Mining:					
Extractive and mining concerns	7	12.3	6.0	12.2	85.7
Total	57†	100.0†	49.0	100.0	

† This figure excludes the seven ZSE listed companies that are financial institutions not included in this study.

Excluding the seven financial institutions listed on the ZSE, the remaining 57 listed companies fall into 50 (that is, 87.7 per cent) in the commercial and industrial sectors and seven (12.3 per cent) in the extractive and mining sectors. The sample represent 49 of the 57 companies. Forty-three of the sample companies are in the commercial and industrial sectors (that is, 87.8 per cent), while the remaining six companies (12.2 per cent) are from the mining sector. The sample therefore replicates

the industrial distribution profile of the entire population. On this basis and following the recommendation of Wallace and Mellor (1988, p. 133), the annual reports and accounts of the sample companies can provide a basis for generalising on the ZSE corporate reporting profile.

Summary

This chapter has outlined how and why the companies in the sample were selected. It has also described the characteristics of the sample and its relationship with the population from which it was drawn.

CHAPTER IX

THE MANDATORY DISCLOSURE INDEX

> By weighing we know what things are light and what heavy. By measuring we know what things are long and what short. The relations of all things may be thus determined, and it is of the greatest importance to measure the motions of the mind. I beg your majesty to measure it.
>
> (Seneca, 335 B.C.; quoted in Ebel, 1979, p. 310)

This chapter describes how mandatory disclosure practices of the companies in the sample were quantitatively and empirically measured. It also assesses the internal validity and reliability of the disclosure measuring instrument employed. Further, it describes the mandatory disclosure adequacy index created for this study.

Recall that the present investigator chose the index approach to measure the adequacy of disclosure in the annual reports and accounts of the sample companies. The index technique involves four steps. These are: (1) the selection of information items; (2) assignment of scores to the selected information items; (3) accumulation of the assigned scores; and (4) handling inapplicable information items and index validation. These steps are presented in detail in the rest of this chapter.

Selecting Mandated Disclosure Items

As was pointed out by Wallace (1988, p. 354), there is no general theory governing the selection of disclosure items for inclusion in a disclosure index. The selection is generally determined by the focus of a particular study. A disclosure item is included in the disclosure measuring instrument (or the index) on the basis that it is mandated under the accounting disclosure requirements of the regulatory regime that

was operative in Zimbabwe during 1994. During this period, the financial regulatory environment was characterised by the government's legal requirements (Companies Act), the stock exchange's minimum disclosure as a condition of allowing a company's shares to be traded (Listing Agreement), and the pronouncements of the professional accountancy body -- the ICAZ (that is, the adopted IASs). Generally, these regulatory sources affect the financial reporting and disclosure practices of public listed companies in Zimbabwe. Specifically, the listed companies are required by the ZSE to report in conformity with the accounting disclosure requirements of the Companies Act, 1952 (Chapter 190), the Listing Agreement of the ZSE, and the adopted IASs.

Consequently, the disclosure items included in the measuring instrument were selected from the three regulatory sources. A disclosure item refers to "each separately stated requirement to disclose a number and/or piece of information" (Barth and Murphy, 1994, p. 2). The disclosure items were selected on the following basis. Where an item is required to be disclosed under any two or under all the three regulatory sources, the most comprehensive of them is selected. This approach was adopted for two reasons. The first is to avoid any potential problem of duplication. The second reason is that as the primary purpose of mandatory disclosure is to facilitate the making of informed investment decisions on listed companies by users of corporate annual reports, the source that accomplishes this purpose most efficiently by requiring a detailed information of a particular disclosure item is selected. In most cases, the IASs tend to demand a detailed disclosure, and as a result, the index is dominated by disclosure items from this source. In situations where two or more sources would have complemented each other, they would have been stated as they were. However, I did not come across such a situation.

The Quality of the Disclosure Measuring Instrument

An instrument based on measurement in any scientific research must pass two important tests (Carmines and Zeller, 1979; Babbie, 1994). First, the instrument should be reliable. Thus, the instrument when applied repeatedly to the same object or concept under similar conditions, should yield the same or similar results each time (Carmines and Zeller, 1979). Second, it must be valid. In other words, the validity test answers the question: Is the instrument measuring the right thing (object, concept or phenomenon)? According to the measurement literature, the goodness of a measuring instrument is established through different validity and reliability tests summarised in Figure 9.1. The procedures used to test the goodness of the disclosure measuring instrument designed for this study are discussed in the following sub-sections.

Testing the Validity of the Measuring Instrument

A measuring instrument is said to be valid if it measures what it is intended to measure, and invalid if it does not (Carmines and Zeller, 1979). A review of the research literature indicates that there are two types of validity: external and internal. The external validity is concerned with research findings. It asks: "how representative of, or generalisable to, particular populations, settings, independent variables, and dependent variables is the study?" (Smith, 1975). The internal validity of a research design is its ability to measure what it purports to measure (Smith, 1975). Babbie (1994) relates these concepts to the index technique. He states that while internal validity refers to "the relationship between individual items included in the composite measure and the measure itself," external validation refers to "the relationship between the composite measure and other indicators of the variable - indicators not included in the measure" (Babbie, 1994, p. 183). The discussion in this sub-section, however, focuses only on internal validity (hereafter referred to as "validity").

There are four major forms of internal validity, namely concurrent, predictive, construct, and content (Cronbach and Meehl, 1955). However, concurrent and predictive validity are often examined together in the testing literature as *criterion-oriented validity* (see, for example, Cronbach and Meehl, 1955; Emory, 1976; Sekaran, 1992). They are briefly explained as follows.

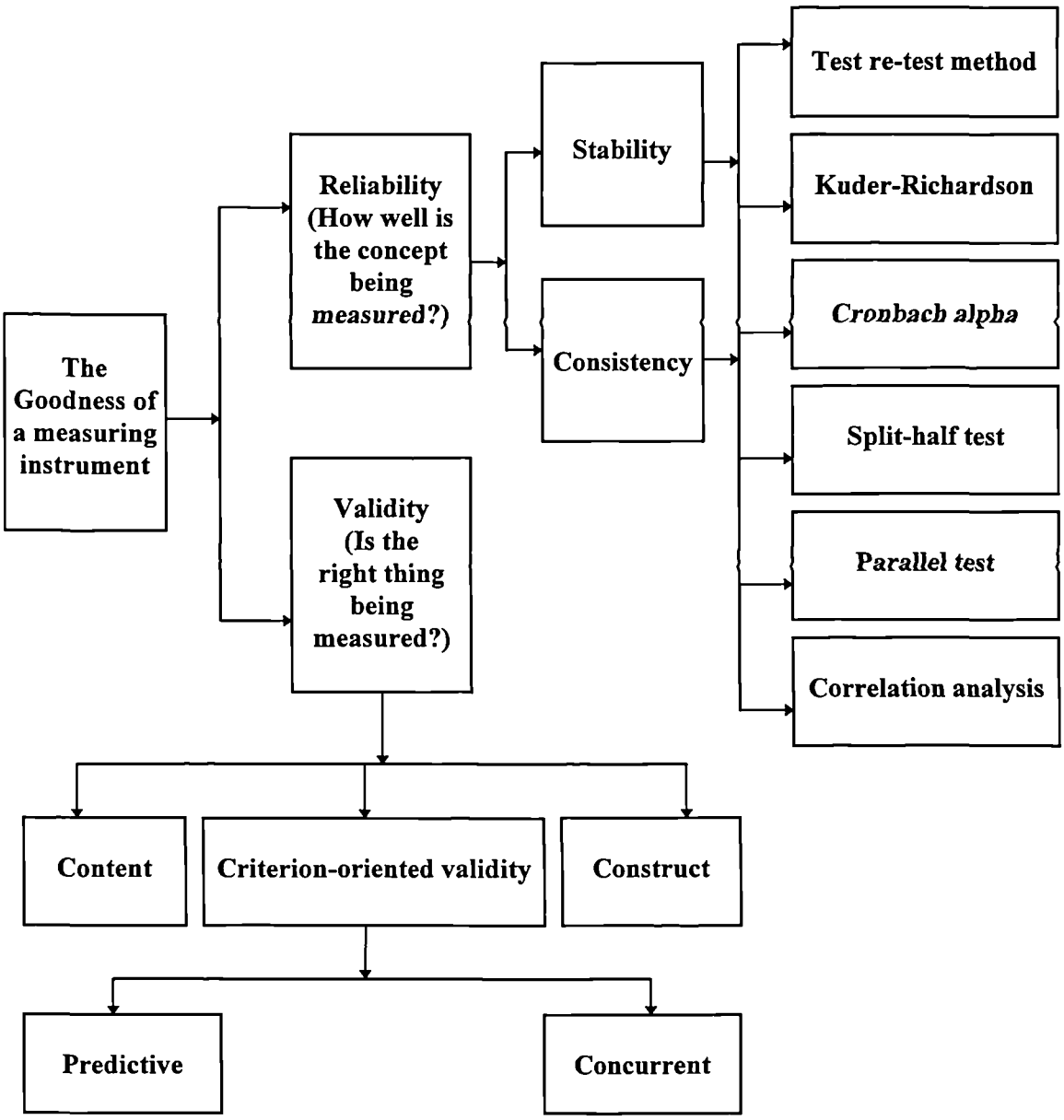


Figure 9.1: The goodness of measuring instrument tests: validity and reliability†

† The design of the figure is adapted from Sekaran (1992, p. 170).

Nunnally (1978) provides a useful description of criterion-oriented validity. According to him, ". . . is at issue when the purpose is to use an instrument to estimate some important form of behaviour that is external to the measuring instrument itself, the latter being referred to as the criterion" (Nunnally, 1978, p. 87). According to Cronbach and Meehl, if the criterion is obtained some time after the instrument had been administered; the investigator is studying *predictive validity*. However, if both are determined essentially at the same time, the investigator is studying *concurrent validity*. Criterion-oriented validity has been used extensively in psychology and education to analyse the validity of certain types of tests and selection procedures. However, it has a rather limited use in the social sciences. Carmines and Zeller (1979) noted that, in many cases, there are no criteria against which the measure can reasonably be evaluated. Added to above limitation is the fact that, it is also inapplicable to many of the abstract concepts used in social sciences. In contrast, *construct validity* is "an evaluation of the extent to which an instrument measures the theoretical construct the investigator wishes to measure" (Kidder, 1981, p. 133). A *content validity*, on the other hand, is concerned with the extent to which a measuring instrument provides an adequate coverage of a subject matter (Emory, 1976). The content of an instrument is valid if it contains a "representative sample of the universe of subject matter of interest" (Emory, 1976). In the context of this study, a content validity would require the disclosure measuring instrument to "include an adequate and representative set of *mandated information* items that would tap the concept *of adequate disclosure*" (Sekaran, 1992, p. 171, [Emphasis mine]). The process by which content validity was assured in this study is now discussed.

Validation of a measuring instrument always requires empirical investigations, with the nature of evidence required depending on the type of validity being studied (Nunnally, 1978, p. 86). The evidence that was required in the case of this study, mainly

concerns the opinions of people who are involved in the practice, and development of the accountancy profession in Zimbabwe as to the appropriateness of the selected mandated information items included in the composite index. That is, how well does the disclosure measuring instrument for this study adequately capture the annual report mandatory disclosure requirements of the ZSE. This validation procedure is described in the measurement literature as *Item Analysis* (Ebel, 1979; Babbie 1994, p. 173). To validate the disclosure measuring instrument for this study, four external auditors of the companies in the sample were randomly selected and the senior partners of these audit firms written to, and requested:

(a) to review the disclosure items in the measuring instrument in the light of the regulatory regime that was operative in Zimbabwe during 1994;

(b) to indicate those disclosure items included in the instrument that are not required of public listed companies under the regulatory regime; and

(c) to add any disclosure item required of public listed companies but not included in the instrument and specify its regulatory source.

The senior partners of two of audit firms (Price Waterhouse and Coopers and Lybrand) responded. Their comments were taken into account in revising the measuring instrument. For example, the disclosure item number 32 which carries a maximum possible score of 23, was included in the index following the responses from these auditors. Also, following the consultation with these auditors, a number of sub-items under IASs disclosure items were eliminated from the index because they are irrelevant to the socio-economic conditions in Zimbabwe.[1]

[1] Particularly, Mr. Tom Purdon, the Technical Partner of Price Waterhouse (who responded on behalf of the senior partner of that audit firm) remarked that he has not seen the need for those items, let alone their disclosure, in his professional career in Zimbabwe.

Certain information items that relate to relatively insignificant matters were also eliminated from the index. A typical example of such items is the requirement of the Section 117 of the Companies Act that the books of accounts be kept in the English language. The instrument that was finally applied against the annual reports and accounts of the companies in the sample consists of 32 disclosure items. Because each disclosure item requires multiple types of information, and to capture the intensity of information provided on each item, the disclosure items were disaggregated into 214 sub-items.

To this end, it can reasonably be justified that the measuring instrument developed for this study is valid as the concept for which it is designed can adequately be captured. Nunnally (1978, p. 87) summed up the principle well but in reverse: "There is no way to prove the validity of an instrument purely by appeal to authority, deduction from . . . *accounting* theory, or any type of mathematical proof. Validity usually is a matter of degree rather than an all-or-more property . . . ." (Emphasis mine)

It must be stressed, however, and as was pointed out by Cronbach (1971, p. 447) and Nunnally (1978, p. 87), one does not validate a measuring instrument, but rather the interpretation of data arising from a specified procedure. Thus, in simple terms, it is not the instrument that was validated, but the purpose for which it is designed and used. For example, the instrument was validated for the purpose of measuring mandatory disclosure practices of companies listed on the ZSE, and would not necessarily be valid for other purposes such as measuring voluntary disclosure of the same companies, or mandatory disclosure practices of companies listed on, say, Kuala Lumpar Stock Exchange, simply because Malaysia has also adopted IASs as its national accounting standards. Nunnally (1978, p. 87) argued, however, that although a measuring instrument may be valid for a particular purpose, it can be used for many different

purposes, the validity with which each class of functions is served must, however, be supported by evidence.

Testing the Reliability of the Measuring Instrument

Conceptually, a measuring instrument is reliable if it behaves similarly when administered on the same or a similar object (or sample) under similar circumstances (Carmines and Zeller, 1979; Babbie, 1994). Thus, an instrument is reliable if its repeated application yields the same or similar results. Essentially, reliability refers to the precision of a measurement rather than its accuracy. It is concerned with the internal stability and consistency in measurement (Carmines and Zeller, 1979). A reliability test answers the question: How well does the instrument measures the concept of interest? In the context of this study, it tests how the constructed measuring instrument consistently measures the mandatory disclosure practices of the companies in the sample when used on different occasions or by different people. It is essential that a reliability test is done in disclosure studies as several factors may mitigate the scoring process, and as a consequence, affect the precision of the measurement of the disclosure scores. These factors include fatigue effects, memory effects, and the emotional state of the researcher during the time the sampled annual reports and accounts were being scored. In fact, according to Oppenheim (1992, p. 159), the concept of reliability "includes both the characteristics of the instrument and the conditions under which it is administered - both must be consistent."

There are several different ways to assess reliability of a measuring instrument (Cronbach, 1951; Lord and Novick, 1968, p. 198-216; Nunnally, 1978, Carmines and Zeller, 1979; Ebel, 1979; Oppenheim, 1992; Norusis, 1994a). They include: (1) Cronbach alpha test; (2) the split-half test; (3) test-retest method; (4) Kuder-Richardson (or Analysis of variance of coefficients); (5) the parallel test; and (6) correlation analysis

(Nunnally, 1978; Ebel, 1979; Oppenheim, 1992, p. 159). Except the correlation analysis, none of these methods was employed because they are not appropriate for the data of this study. Ebel (1979, p. 275), for instance, operationally defined reliability test as "the coefficient of correlation between that set of scores and another set of scores on an equivalent test obtained independently . . . ."

Indeed, the practice in disclosure studies has been the use of a correlation analysis in assessing the reliability of constructed disclosure measuring instrument (see, for example, Wallace, 1988, p. 354, footnote 4; Wallace and Naser, 1995, p. 332; Hussein, 1996, pp. 107-108).[2] Nunnally (1978, p. 236) recommends that if the scoring procedure involves some element of subjectivity, which is true of this study, then an alternative form of reliability test is to let the instrument be independently scored by different persons.

Consequently, to test the reliability of the disclosure measuring instrument, annual reports and accounts of 12 companies in the sample (representing about 25 per cent of the total sample size) were randomly drawn, and were sent by post to Mr. Christos Vlachos in Nicosia, Cyprus to be scored independently by him. Mr. Vlachos is a qualified certified accountant with three years of public practice and six years of academic post qualification experience.[3] A correlation test was performed on his scores and those obtained earlier by the present investigator. The results of the test are presented in Tables 9.1 and 9.2. The coefficients of a parametric test, Pearson product-moment correlation, for maximum possible, actual and relative scores (to be explained later) are 0.835, 0.674, and 0.728 respectively (Table 9.1). They are all significant at 1 per cent level for a one-tail test. Also, in Table 9.2, the results of a non-parametric test,

[2] Botosan (1997), on the other hand, used Cronbach alpha to measure the internal consistency of her disclosure measuring instrument.

[3] He is also a part-time Ph.D. candidate in accounting conducting a similar study, but investigating different research questions on data from Cyprus and Greece.

Spearman rank-order correlation, indicate that the maximum possible scores as well as the relative scores are all significant at 1 per cent for one-tail test. The actual scores are, however, significant for one-tail tests at the 5 per cent level.

Table 9.1

Results of reliability analysis on the disclosure measuring instrument: Pearson product-moment correlation test

Type of disclosure score	Statistics (Significance levels in parentheses, n = 12)					
	Stephen's scores			Christos's scores		
	Maximum possible	Actual	Relative	Maximum possible	Actual	Relative
Stephen's scores:						
Maximum possible score	1.000	0.821	-0.051	0.835	0.576	-0.340
	n/c	(0.001)	(0.438)	(0.000)	(0.025)	(0.140)
Actual score	0.821	1.000	0.526	0.681	0.674	0.125
	(0.001)	n/c	(0.039)	(0.007)	(0.008)	(0.349)
Relative score	-0.051	0.526	1.000	-0.032	0.338	0.728
	(0.438)	(0.039)	n/c	(0.460)	(0.141)	(0.004)
Christos's scores:						
Maximum possible score	0.835	0.681	-0.032	1.000	0.859	-0.075
	(0.000)	(0.007)	(0.460)	n/c	(0.000)	(0.408)
Actual score	0.576	0.674	0.338	0.859	1.000	0.446
	(0.025)	(0.008)	(0.141)	(0.000)	n/c	(0.073)
Relative score	-0.340	0.125	0.728	-0.075	0.446	1.000
	(0.140)	(0.349)	(0.004)	(0.408)	(0.073)	n/c

n/c indicates that the significant level of a coefficient can not be computed.

Table 9.2

Results of reliability analysis on the disclosure measuring instrument: Spearman rank-order correlation test

Type of disclosure score	Statistic (Significance levels in parentheses, n = 12)					
	Stephen's score			Christos's score		
	Maximum possible	Actual	Relative	Maximum possible	Actual	Relative
Stephen's scores:						
Maximum possible	1.000	0.720	-0.155	0.796	0.524	-0.421
	n/c	(0.004)	(0.315)	(0.001)	(0.040)	(0.086)
Actual	0.720	1.000	0.549	0.544	0.650	0.147
	(0.004)	n/c	(0.032)	(0.034)	(0.011)	(0.324)
Relative	-0.155	0.549	1.000	-0.170	0.331	0.770
	(0.315)	(0.032)	n/c	(0.299)	(0.147)	(0.002)
Christos's score:						
Maximum possible	0.796	0.544	-0.170	1.000	0.793	-0.243
	(0.001)	(0.034)	(0.299)	n/c	(0.001)	(0.223)
Actual	0.793	0.650	0.331	0.793	1.000	0.379
	(0.001)	(0.011)	(0.147)	(0.001)	n/c	(0.112)
Relative	-0.421	0.147	0.770	-0.243	0.379	1.000
	(0.086)	(0.324)	(0.002)	(0.223)	(0.112)	n/c

n/c indicates that the significant level of a coefficient can not be computed.

These results suggest that the scores (identified as Stephen and Christos in Tables 9.1 and 9.2) obtained independently by both scorers were in substantial agreement; indicating minimal subjectivity in interpreting and scoring the mandatory disclosures in the annual reports and accounts of the sample companies.

Another implication of the results is that the measuring instrument can be said to be reliable as it yields and will yield similar results when applied repeatedly by different scorers. A question that arises is: At what correlation level will the reliability of the measuring instrument be considered satisfactory? The following statement by Carmines and Zeller (1979, p. 51) is illustrative:

> Unfortunately, it is difficult to specify a single level that should apply in all situations. As a general rule, [we] believe that reliabilities should not be below 0.80 for widely used scales. At that level, correlations are attenuated very little by random measurement error. At the same time, it is often too costly in terms of time and money to try to obtain a higher reliability coefficient. But the most important thing to remember is to report the reliability of the scale, and how it was calculated. Then other researchers can determine for themselves whether it is adequate for any particular purpose.

Although, the coefficients of the Pearson product-moment and Spearman rank-order correlation tests, as reported in Tables 9.1 and 9.2, are marginally below the 0.80 level suggested by Carmines and Zeller, they are nevertheless indicative of significant correlations between the scores of the two scorers.

The Scoring Procedure

Recall that under the index approach of measuring disclosure, a researcher needs to make a basic decision concerning the scores to be assigned to each disclosed information item. Thus, whether the researcher will give each item an equal weight in the index or different weights to reflect their relative importance from the perspective of users of corporate annual reports. In this study, the unweighted scoring procedure was

employed on a dichotomous basis. Thus, an information item was either scored one if disclosed in a sampled annual report and accounts or zero otherwise. The underlying assumption of this procedure is that all the information items are equally important to an average user of corporate annual reports. Although this assumption may not hold in the real world, the equal (or unit) weighting system was, however, chosen over the differential weighting system for the following reasons.

First, the equal weighting system obviates the necessity of making judgements as to the relative importance of each information item. Research indicates that individuals (even experts) have poor insight into their own judgement process (Slovic, 1969, 1972, p. 787; Slovic, Fleissner and Bauman, 1972; Ashton, 1974). In simple terms, the equal weighting procedure avoids the subjective judgement inherent in the differential weighting system (Spero, 1979).

Second, it permits an independent analysis devoid of the perceptions of a particular annual report user group. Third, it does not favour any particular annual report user group. This study emphasising investment decision-making does not focus on the interest of one particular annual report user group. Fourth, the weighting of the disclosure items was considered not to be of any greater importance than to identify the relevant disclosure items to be included in the index.

Finally, due to constraint of time and resources under which the study was conducted, it was considered uneconomical to carry out an attitudinal survey of users of corporate annual reports in Zimbabwe to obtain weightings for the information items included in the index.

In addition to the above reasons, the differential weighting system is beset by several problems which are well documented in the literature. Some of these problems are reviewed here. First, there is a lack of general consensus as to the relative importance of each information item within a particular study. This is evidenced by the

use of mean values of questionnaire responses of a particular information item as a measure of its relative importance. Second, there is no general consensus on the relative importance of different information items among different samples of financial analysts used as questionnaire respondents in different disclosure studies (Firer and Meth, 1986, pp. 377-378). This limitation is illustrated in Table 9.3 where the scores in each cell represent the mean responses. These mean responses are not comparable because they have differing rating scales. For instance, while rating scales employed in Cerf (1961) and Singhvi and Desai (1971) were anchored on 1 – 4, Buzby (1975) was 0 – 4, and those of the other studies were 1 – 5. To standardise the mean responses, for comparative purposes, it was necessary to relate the reported mean responses to the mean of the rating scales. For instance, when the mean of Cerf's (1961) rating scale was 2.5, the mean response in respect of "Sales Broken Down By Product Lines" (information item [e] in Table 9.3) was 2 which translate to 0.80 (mean response ÷ mean of the rating scale). The lack of general consensus on the relative importance of the information items becomes clearer when the mean responses in these studies were standardised. While the item (e) was rated 80 per cent of the mean response rate in Cerf (1961) and Singhvi and Desai (1971), it was rated 183 per cent, 161 per cent and 130 per cent of the mean ratings employed in Buzby (1975), Firth (1978) and Firer and Meth (1986) respectively. Third, the relative importance of disclosure items is dynamic and not static as they depend on prevailing economic conditions (Dhaliwal, 1980, p. 388). This point is also illustrated in Table 9.3. Although Cerf (1961); Singhvi and Desai (1971); and Buzby (1975) used US-based financial analysts in their attitudinal survey, the relative importance of most of the items examined in these studies are different. The differences are well marked between Cerf (1961) and Buzby (1975), and between Singhvi and Desai (1971) and Buzby (1975), but not between Cerf (1961) and Singhvi and Desai (1971) as Singhvi and Desai adopted Cerf's (1961) data. So, this can not be

an exception to the rule. These variations in items' relative importance suggest instability of user's perception over time (Dhaliwal, 1980).

Table 9.3[4]

Comparative analysis of the relative importance of some selected disclosure items (Standardised relative importance of items in parentheses[a])

Selected information items	Study				
	Cerf (1961)	Singhvi and Desai (1971)	Buzby (1975)	Firth (1978)	Firer and Meth (1986)
Rating scale	1 – 4	1 – 4	0 – 4	1 – 5	1 – 5
Mean scale	2.5	2.5	2	3	3
a. Discussion of major factors affecting future business	2 (0.80)	2 (0.80)	3.23 (1.61)	n/a	n/a
b. Description of tangible assets	2 (0.80)	2 (0.80)	2.09 (1.04)	3.27 (1.09)	3.07 (1.02)
c. Description of management	1 (0.40)	1 (0.40)	2.93 (1.46)	4.54 (1.51)	2.28 (0.76)
d. Description of major products development	n/a	1 (0.40)	3.37 (1.68)	4.01 (1.34)	n/a
e. Sales broken down by product lines	2 (0.80)	2 (0.80)	3.67 (1.83)	4.82 (1.61)	3.91 (1.30)
f. Capital expenditure plans	3 (1.20)	3 (1.20)	3.50 (1.75)	4.51 (1.50)	4.29 (1.43)
g. Research and development	3 (1.20)	3 (1.20)	3.28 (1.64)	3.55 (1.18)	3.28 (1.08)
h. Inflation accounting	n/a	n/a	2.90 (1.45)	4.16 (1.39)	3.27 (1.09)
i. Depreciation method	3 (1.20)	3 (1.20)	3.71 (1.85)	n/a	3.71 (1.24)
j. Inventory valuation method	3 (1.20)	1 (0.40)	3.64 (1.82)	n/a	n/a

[a] The standardised scores are reported mean response divided by the mean of the instrument anchor.

n/a implies that the particular information item was not considered in that study.

[4] This table extends an earlier work by Dhaliwal (1980, p. 388). Information items (e), (f), (g), (h), (i) and (j) in Table 9.3 were not originally included in Dhaliwal's comparative analysis as well as the studies by Cerf (1961), Firth (1978) and Firer and Meth (1986). Those items and the studies were selected arbitrarily to further substantiate Dhaliwal's point.

Fourth, responses of any particular user group of corporate annual report surveyed will be hypothetical. Thus, respondents suffer no real economic consequences of their rating, and as such may not fully reflect the actual use of each information item (Libby, 1981, pp. 40-43).

Finally, several empirical studies suggest that the results of the equal weighting system are similar to those of the differential weighting system (Spero, 1979; Firth, 1980a, pp 105-110; Robbins and Austin, 1986; Chow and Wong-Boren, 1987; Priebjrivat, 1991; Zarzeski, 1996, p. 31). In one earlier study it was demonstrated, however, that the unit weighting system is superior to the differential weighting system (Einhorn and Hogarth, 1975). Einhorn and Hogarth found that, in a wide range of decision making situations, unit weighting system predicts lesser deviations from the optimal solution than differential weighting system. Wallace and Naser (1995) have, however, stated that a cautious approach should be taken in advancing the argument of equivalence of results of the two scoring procedures. On the basis of a simple test conducted by them, they concluded that the equivalence of the results reported in some of those studies cited above, do not always hold. A detailed analysis of the results of those studies upholding the supremacy of unit weighting over differential weighting system and Wallace and Naser's recent evidence is not a purpose of this study, and it is beyond its scope. It will suffice to say, however, that in general the balance of opinion (and practice) favours equal weighting system. In this regard, Babbie (1994, p. 171) remarks:

> Although there are no firm rules, [I] suggest -and practice tends to support this method- that items be weighted equally unless there are compelling reasons for differential weighting. That is, the burden of proof should be on differential weighting; equal weighting should be the norm.

Another methodological problem concerns whether undisclosed information was inapplicable to sample company *j* or not. Of course, non-compliance with a mandatory requirement is difficult, if not impossible, for an outsider (a researcher) without inside knowledge to know whether the information item was applicable and material which should have either been disclosed or circumstances surrounding its non-disclosure reported, but have not.

To determine whether or not the absence of a mandated information item from an annual report and accounts is a case of non-disclosure (non-compliance), several measures were taken to minimise this subjectivity problem inherent in the scoring procedure. First, current figures of each information item were compared with that of the previous year as presented in the annual reports and accounts of the sample companies. Public companies are required by law to show comparative figures for each information item in their annual reports and accounts. For example, a dash in front of a particular information item under the column showing current year's figures (that is, 1994 in this study) suggests inapplicability of that item to a sample company in that reporting period. The same interpretation can be made of a dash under a column showing prior year's figures (that is, 1993 in this study). In some cases, 1995 annual reports and accounts of the sampled companies were used to cross-check items' applicability as the 1995 annual report and accounts will also present the comparative 1994 figures for each element of the financial statements. As in Buzby (1974b, p. 424), an item applicability to a specific sample company is defined as whether or not the item is disclosed in the annual reports and accounts of that company.

Second, a suggestion by Cooke (1989) was implemented by reading the entire annual reports and accounts of each sample company on two occasions. The first reading was just before each sampled annual report was actually scored. This reading familiarised me with the circumstances of each company. It also enabled me to form an

opinion whether an undisclosed item was, in fact, inapplicable to that companies. The second reading was after an annual report has been scored was to ensure that the scoring has been consistent and any mistake rectified before the scores are totalled. Cooke suggested that by reading the sampled annual reports and accounts thoroughly the subjective judgement involved in the scoring process is minimised. To this end, it can reasonably be concluded that the problem of subjectivity involved in the scoring process is reduced if not completely eradicated.

It must be stressed, however, that this subjectivity problem is not very pronounced in the case of mandatory disclosure studies as it is with voluntary disclosure studies. This is because in the case of the former there is a defined disclosure regulatory structure which has been set by the regulatory bodies, whereas in the case of the latter there is no such framework. There is neither a minimum nor a maximum amount of information that a company will need to voluntarily disclose in its annual reports.

Moreover, on *a priori* assumption the applicability of some information items to every company in the sample can be established. For instance, all the companies own fixed assets of one form or another, hence depreciation of fixed assets is expected to be disclosed. Thus, the applicability of disclosure item number two (relating to depreciation of property, plant and equipment) to a company in the sample can easily be, and was, easily established. Also, as indicated earlier, non-disclosure of an applicable mandated information item under any regulatory regime can be costly. Consequently, companies try to minimise such costs by complying with regulatory and legislative rules in as far as they are applicable to them.

As noted earlier, another problem of the index approach that arises after the scoring of the annual reports is that certain mandated information items may not be applicable to *all* the sample companies. This makes interpretation of any comparison of a score of one sample company with others unintelligible as there is no common basis of

such comparison. Babbie (1994, p. 172) considers this inapplicability of information items on the macro level a special case of missing data problem. He outlines several possible approaches of controlling the problems of missing data. However, only two of them are relevant to disclosure studies, and are accordingly reviewed here. The first is to exclude the inapplicable information items from the composite index and the subsequent analysis based on it. Wallace, Choudhury and Adhikari (1997) used a variant of this procedure. The exclusion procedure is appropriate if relatively few disclosure items are inapplicable to the sampled companies. A potential problem with this approach is that the exclusion of the inapplicable disclosure items can bias the representativeness of the findings of the study (Babbie, 1994). Similarly, their inclusion can also influence the nature of the results. Thus, the findings of the study may not reflect the true mandatory disclosure practices of the sampled companies. The second method to control the inapplicability problem of certain information items is to create a relative index. Thus, using proportion of what is observed in an annual reports of a company to that a sampled company is expected to disclose under the regulatory regime.

Babbie did not, however, advocate the use of any particular approach to handle missing data problems. He suggested, however, that "the safest and best method is to construct the index using alternative methods and see whether the same findings follow from each" (Babbie, 1994, p. 173). Of course, if consistent results are obtained across these methods, confidence in the reliability of the findings would be significantly enhanced. However, I prefer the relative indexing procedure to the exclusion indexing method for several reasons. First, it is appropriate when constructing an index out of several disclosure items which is very much true of the present study. Second, as indicated earlier, it is conceptually superior when considering the level of disclosure of companies with differing industrial backgrounds (Moore and Buzby, 1972). Again, this is also true of this study. Finally, several prior disclosure studies have used the relative

indexing procedure to circumvent the missing data problem (see, for example, Buzby, 1975; Wallace, 1987; Firth, 1980a; Ahmed and Nicholls, 1994; Inchausti, 1997; Patton and Zelenka, 1977). Consequently, this procedure was employed in this study.

Basically, the relative indexing procedure involves the computation of three different, but related scores. These are maximum possible score, actual score, and relative score. It is, however, the relative score that is interpreted as the mandatory disclosure score of each sample company in this study. This score is derived from both the maximum possible score and the actual score as follows:

a) Maximum possible score

This is the maximum possible score that a sample company can earn on the index if all mandated items were disclosed in its annual report and accounts. The maximum score on the composite index is 214. Although the maximum score a sample company can earn on the index is 214, a maximum score for each individual company depends on its corporate circumstances as some of the required information items may not be applicable to it. In such cases, the maximum score for that particular company will be 214 – l, where l is the number of information items not applicable to that company. To ascertain l (or the result of 214 – l) the audited annual reports and accounts of the sampled companies were thoroughly read. The maximum possible score for each sample company was derived by employing the following formula:

$$MPS_j = \sum_{i=1}^{m_j} d_{ij} \tag{9.1}$$

where,

d_{ij} = disclosure value of i item of information required of j sample company. It is 1 if it is disclosed or 0 if it is not disclosed;

MPS_j = maximum possible score that the j sampled company could earn;

m_j = the number of information items applicable to, and are expected to be disclosed by the j sampled company, where $m_j \leq 214$.

b) Actual score

This is the score attained by a sample company for actually disclosing the mandated information items on the index in its audited annual report and accounts. It is the summary score for the mandated items that are actually observed to have been disclosed in the annual report and accounts of a sample company. In algebraic symbols, it is stated as:

$$AS_j = \sum_{i=1}^{n_j} d_{ij} \tag{9.2}$$

where,

AS_j = the actual score earned by the j sample company; and
n_j = the number of mandated information items applicable to the j sampled company disclosed by that company.

(c) Relative score

The relative score is the ratio of the actual disclosure score earned by a sample company to the maximum possible score that it could have earned. It is the proportion of possible or maximum amount of mandated information items applicable to the j sample company that were observed to have been disclosed in its audited annual reports and accounts. The computed relative score, for, say, the j sampled company, is expressed as:

$$RS_j = MDS_j = Actual \;\; Score \div Maximum \;\; Possible \;\; Score \tag{9.3}$$

$$= \sum_{i=1}^{n_j} d_{ij} \div \sum_{i=1}^{m_j} d_{ij} \tag{9.4}$$

where,

RS_j	=	the relative score of the *j* sample company; and
MDS_j	=	the mandatory disclosure score of the *j* sample company, where $MDS_j = RS_j$.
n_j	=	as previously defined in Equation 9.2, where $n_j \leq m_j$; and
m_j	=	as previously defined in Equation 9.1.

Except the statistical analysis for the second research question, all others are based on the relative disclosure score (mandatory disclosure score). The statistical analysis for the research question two utilises both the maximum possible score and actual score.

Description of the Disclosure Index

The measuring instrument designed to capture the adequacy of mandatory disclosure practices of the sample companies consists of two parts: Part A and Part B (see specimen in Appendix B). The Part A summarises corporate specific attributes extracted from the annual report of each company and other data sources indicated earlier, and the total score of each of the mandated disclosure items in the index. The Part B contains the details of the mandated disclosure items which were scored on the basis of what is disclosed in the annual reports and accounts of each sample company.

To summarise the index, the characteristics of the maximum possible index, actual index, and the relative index, and the relationships between them were examined. Table 9.4 (Panel A) contains descriptive statistics for the individual index resulting from the application of the disclosure measuring instrument against the annual reports and accounts of the sample companies.

It can be discerned from Panel A of Table 9.4 that the mean score ranges from about 74 for relative index to about 102 for the maximum possible index. The standard deviations from the mean are about 5, 11, and 13 for the relative, actual, and the

maximum possible indexes respectively; indicating minimal variability in mandatory disclosure practices of the sampled companies. This result suggests that companies in a particular regulatory environment tend to emulate each others' disclosure practices. Indeed, in a different, but related context, Lang and Lundholm (1993, p. 267) observed that US companies remain relatively constant in their disclosure practices year after year. A plausible explanation for a company to emulate disclosure practices of others in Zimbabwe is that, as it will become clear later, the market for audit services in that country is highly concentrated, and largely dominated by the Big Six international audit firms. Hence, the tendency of external auditors advising a client company to adopt a particular line of a disclosure practice (that is, "follow-the-leader effect") could be high.

Table 9.4

Descriptive statistics and results of test for normality on the disclosure indexes

Panel A: Descriptive statistics

Type of index	Mean	Standard deviation	Skewness	Kurtosis	Minimum	Maximum
Maximum possible	101.98	13.21	0.470	-0.059	79	137
Actual	76.14	11.37	0.052	0.018	57	107
Relative	74.43	4.96	-0.089	-0.056	63	85

Panel B: Shapiro-Wilk's test for normality

Type of index	*W* statistic	*V* statistic	*Z* statistic	Significance level (one-tailed)
Maximum possible	0.9751	1.150	0.299	0.3826
Actual	0.9727	1.262	0.495	0.3102
Relative	0.9881	0.552	-1.267	0.8974

The nature of the distributions of three indexes were also evaluated with Shapiro-Wilk's test for normality. The Shapiro-Wilk's test was used as it is more appropriate for studies with small sample size (Kleinbaum, Kupper and Muller, 1987, p.

196). The results of the Shapiro-Wilk's test performed at the 5 per cent significance level on the three disclosure indexes are reported in Panel B of Table 9.4. The Shapiro-Wilk test statistic, *W*, for the maximum possible index, the actual index and the relative index are 0.9751, 0.97274 and 0.9881 respectively. The corresponding measures for departure from normality, the *V* statistics, are 1.150 (for maximum possible index), 1.262 (for actual index), and 0.552 (for relative index). According to Stata Corporation (1997, p. 449), a sample drawn from a normally distributed population generally has a median value of one for the *V* statistic. Higher values of *V* statistic suggest non-normal distribution of data. Since the *V* statistics for the maximum possible index, the actual index and the relative index, reported in Panel B of Table 4, are small suggest that the distributions of these disclosure indexes are nearly normal. The significant levels reported in Panel B of Table 9.4 indicate that the distributions of the three indexes are not significantly different from that of a normal population. These results are also confirmed by the statistics on skewness and kurtosis (reported in Panel A of Table 9.4).[5]

A correlational analysis was also performed to specify the form and degree of functional relationships among the three indexes. The results of both Pearson product-moment and Spearman rank-order correlation tests performed on the indexes are shown in Table 9.5. They indicate that the relationship between maximum possible and actual indexes is positive and significant at the 1 per cent level for both one- and two-tail tests (only the results of two-tailed tests are reported here). Similarly, the correlation between actual and the relative indexes is positive and significant at the 1 per cent level for both one- and two-tail tests. The relationship between the maximum possible and

[5] A further evidence that the distributions of three indexes are nearly normal is indicated by the relationships between the standard deviations of the indexes and their respective means. According to Francis (1979, p. 54), for a normal distribution, the standard deviation should be, at most, 33 per cent of the mean. From Panel A of Table 9.4, it is discerned that the standard deviations for the maximum possible, actual, and the relative indexes are 13, 15, and 7 per cent of their associated means respectively. The small standard deviations suggest that the three indexes are fairly normally distributed.

the relative indexes (in Panel B in Table 9.5) is, however, negative and insignificant. This result is surprising given that the latter index (a quotient of the composite index) is driven by the former (a divisor in the composite index).

Table 9.5

Inter-correlation matrix of disclosure index
(Significance levels for two-tailed test in parentheses)

Type of statistical test/ disclosure index	Statistic		
	Maximum possible index	Actual index	Relative index
Panel A: Pearson product-moment			
Maximum possible index	1.000 n/c	0.902 (0.000)	0.024 (0.435)
Actual index	0.902 (0.000)	1.000 n/c	0.477 (0.001)
Relative index	0.024 (0.870)	0.447 (0.001)	1.000 n/c
Panel B: Spearman rank-order			
Maximum possible index	1.000 n/c	0.854 (0.000)	-0.001 (0.993)
Actual index	0.854 (0.000)	1.000 n/c	0.474 (0.000)
Relative index	-0.001 (0.993)	0.474 (0.000)	1.000 n/c

n/c indicates that the significant level of a coefficient can not be computed.

Summary

This chapter has outlined the methodological techniques employed to measure quantitatively the mandatory disclosure practices of the companies in the sample. It has also provided evidence supporting the validity and reliability of the measuring instrument. While the instrument was validated on the basis of the opinions of some professional accountants in Zimbabwe, its reliability was assessed statistically by

performing a correlation test on the results of its application by the present investigator and an independent scorer.

The distributions of the indexes were explored, and the relationships between them evaluated. The two exploring tests performed on the data on each of the indexes yielded similar results. That is, the results of both Shapiro-Wilk test and descriptive statistics suggest that the distributions of the data on maximum possible index, actual index and the relative index are fairly normal.

The correlation tests performed suggest that the indexes are strongly positively related to each other except that between maximum possible index and the relative index. Thus, only the relationship between maximum possible index and the relative index according to the Spearman rank-order correlation test is, however, negative and insignificant.

CHAPTER X

OPERATIONAL DEFINITIONS AND MEASUREMENT OF VARIABLES

When you can not measure it, when you can not express it in numbers, your knowledge is of a meagre and unsatisfactory kind.

(Lord Kelvin)

When you can measure it, when you can express it in numbers, your knowledge is still of a meagre and unsatisfactory kind.

(Jacob Viner)

(Qouted in Berelson and Steiner, 1964, p. 14)

This chapter presents an operational definition of the concept of "stringency" of disclosure regulatory regime, and empirical measures of the identified corporate attributes for the purposes of statistical analysis. To facilitate measurement and the understanding of it is achieved, the concept of "stringency" and the concept underlying corporate attributes need to be translated from ambiguous mental images to precise, empirical measures.

Measurement is a *sine qua non* of any scientific research. It has been defined in a variety of ways (see Lorge, 1951). But, for the present purpose, only two of these definitions are considered. The most popular definition of measurement is that provided by Stevens (1951). He defined measurement in the broadest sense as "the assignment of numerals to objects, or events according to rules" (Stevens, 1951, p. 22).

Although Stevens' definition of measurement succinctly and accurately expresses its basic nature, Ellis (1966) and Carmines and Zeller (1979) have criticised it. For instance, Ellis criticised it as being too vague; and suggested that to overcome this problem of vagueness, it is necessary to restrict permissible rules. In support of his criticism, Ellis argued that the rules for making numerical assignment must be "determinative" so that the same numerals (or ranges of numerals) would always be

assigned to the same objects under the same conditions. This requirement is important and necessary because the rules are the guides, methods, commands that tell how and what to do, and should therefore be specific to ensure consistency. Ellis argued further that the rules should be "non-degenerative" to avoid the possibility of "assigning a number to everything." On the basis of the above criticism, Ellis defined measurement as "the assignment of numerals to things according to any determinative, non-degenerate rules" (Ellis, 1966, p. 41).

Carmines and Zeller (1979) also criticised Stevens' definition for being of a limited use to social scientists. They argued that many phenomena usually measured in social research are neither objects nor events. They added that these phenomena are, rather, too abstract to be adequately characterised as either objects or events. Finally, they concluded that Stevens' classical definition of measurement is much more appropriate for the physical than the social sciences. In their subsequent paper, they considered measurement as most useful when it is viewed as a "process of linking abstract concepts to empirical indicants" (Zeller and Carmines, 1980).

This study employs measurement approaches suggested by both Ellis and Zeller and Carmines to define operationally, classify, and quantify the corporate attributes selected for investigation in this study. As Kerlinger (1973, p. 432) pointed out, it is not the object (or the phenomenon) that is measured, but the indicants of the properties or characteristics of the object (or the phenomenon). In the context of this study, it is not the selected corporate attributes that are measured, but the empirical indicants of the properties of these attributes. This is generally true of all science, though the properties of some natural objects (or phenomena) are much closer to direct observation than others. An indicant simply means something that points to something else. Certain properties can directly be measured; others defy a precise or a direct measurement. For instance, company size is not directly measurable nor quality of an external audit, and the impact of

multinational corporation affiliation. They are inferred by observing some presumed indicants of these properties or characteristics. The indicants from which properties are inferred are specified by the operational definitions. An operational definition is necessary in order to measure a variable. After defining the concepts operationally, numerals are assigned to the behavioural indicants of the properties.

Operational Definitions and Measures of Variables

This section presents the operational definition of the concept of "stringency." It also discusses how the identified eight corporate attributes have been measured, together with their underlying rationale.

Operational Definition of "Stringency" for Hypothesis 1

A review of the literature uncovers a state of confusion about the meaning of the term "stringency." This is evidenced by the use of the term in different and inconsistent ways by different writers. The definitions offered in the literature can broadly be categorised into two. In one sense, the term "stringency" has been used to mean the strictness in enforcing disclosure regulatory requirements (see, for example, Frost and Pownall, 1994, p. 76 and also implied in Cooke and Wallace, 1990, p. 82). In another sense, however, it has been used to mean extensiveness (detail) of disclosure requirements (see, for example, Saudagaran and Biddle, 1992, 1995). A useful clarification of these definitions is provided by two English dictionaries. The *Oxford English Dictionary* defines stringency as "the quality of being stringent; strictness, rigour." The *Collins Concise English Dictionary* also defines stringency as "requiring strict attention to rules, procedure, detail . . . ." So a regulation is stringent if it is strictly monitored and enforced.

In the context of this study, a disclosure regulatory regime is considered stringent, if the disclosure requirements are strictly enforced on listed companies and their

compliance levels diligently monitored. Thus, a disclosure regulatory regime is stringent if non-compliance with applicable mandatory disclosure requirements by a listed company is penalised. Such a company may be issued a qualified audit report by its external auditor or the stock exchange on which it is listed may either suspend trading in its securities or de-list its securities. Because stringency is an unobservable quality, especially if the regulatory agent adopts a co-operative model of enforcement, it is therefore operationalised here as the degree of the difference between observed and expected disclosure compliance levels of the listed companies in the sample.

The assessment of disclosure compliance level has traditionally been approached empirically from one direction; where full compliance with regulation is assumed (see Tai et al., 1990; Ahmed and Nicholls, 1994). The full compliance assumption is implicit in their use of 100 per cent as a benchmark to assess the degree of disclosure compliance levels of their sample companies with regulatory requirements. For instance, Ahmed and Nichols (1994) analysed the statutory disclosure scores of the 63 companies in their sample, and reported that only 4 of them scored more than 90 per cent. They then concluded that "none of the companies in Bangladesh disclosed *all* mandatory items" (Ahmed and Nicholls, 1994, p. 69). Thus, such analysis assumes full compliance with regulatory requirements, assesses the compliance levels of representative sample companies, and then generalises the results to the entire population from which the sample companies were drawn. While this traditional approach is intuitively appealing, it has several limitations. First, it does not consider the differences between the sampled companies in terms of their responses to regulation. It treats them equally without due regard of their individual corporate circumstances. Second, it does not provide a composite measure which describes the overall stringency of the regulatory regime. Thus, the traditional approach employs descriptive statistics in analysing data. The third limitation which flow from the second is that because of its inability to yield a composite

measure of the overall compliance level, the results (the observed sample values) can not be generalised to the entire population (the unobservable population parameters) from which the sample was drawn. In statistical terms, it precludes the undertaking of a significance test.

Because of the above limitations, and the fact that the disclosure regulatory enforcement style in Zimbabwe is co-operative -- a regulatory regime where some degree of non-compliance with statutory and regulatory requirements is tolerated -- this study employs inferential statistics to assess the stringency of the corporate disclosure regulatory regime which is observed on the basis of the compliance levels of the sampled companies. This statistical procedure recognises corporate differential response to regulatory standards, because it compares the mean expected compliance levels to that of actual compliance levels of the sample companies. It will also help to extrapolate the patterns in the sample, in terms of their regulatory compliance behaviour, to likely patterns in the population from which the sample was drawn.

Measure of Company Size for Hypothesis 2

A variety of variables have been used as a proxy for company size in empirical studies investigating the relationship between company size and corporate disclosure. They include total assets (Cerf, 1961; Singhvi, 1968; Singhvi and Desai, 1971; Ahmed and Nicholls, 1994; Wallace and Naser, 1995; Zarzeski, 1996), market capitalisation (Priebjrivat, 1991; Lang and Lundholm, 1993; Salter and Niswander, 1995; Wallace and Naser, 1995), turnover (Cooke, 1991; Ahmed and Nicholls, 1994; Wallace and Naser, 1995), number of shareholders (Singhvi and Desai, 1971; Wallace, 1987; Cooke, 1992), fixed assets (Cooke, 1992), shareholders' funds (Tai et al., 1990), and bank borrowings (Cooke, 1992). These variables have all been found by several prior studies to associate positively with corporate disclosure; be it mandatory or voluntary. Also, the statistical

problem of multicollinearity has been found to exist among these size variables in prior studies where two or more have simultaneously been used (see, for example, Cooke, 1989b, p. 185). In addition, there is no theoretical reason cited in the literature on disclosure by which one of these variables may be preferred to others. As a consequence, the size of the sample companies in this study is measured both by the book value of total assets and total market value of their outstanding equity shares. While the measure of total assets has no known limitations, market value of equity shares has two. First, it does not represent a company's "assets already in place" (Myers, 1977). That is, a proportion of a company's market value represents discounted future earnings and growth opportunities. Second, it is subject to frequent short-term market price fluctuations.

In spite of the above limitations of market value of corporate equity shares, the choice of this size variable has been influenced in several ways. First, since all the sample companies were listed on the ZSE, their equity market values were easily determinable, and readily available. Indeed, the data on the market values were available for all the companies in the sample. Second, market values of equity shares is the most widely known and used size measure of listed companies in the professional investment community. Third, since market value of equity is determined by market forces external to the company, it is more likely to be objective (Barrett, 1976, p. 11), and independent of management manipulation as compared to other size measures.[1] Furthermore, the market valuation of equity shares takes into account the opportunity cost of the rate of return of comparable investment opportunities. It also adjusts for risk in the market which may be different from the company's subjective discount rate. Finally, and most importantly, the limitations stated above are extraneous to this study, and are therefore not expected to have any significant effect on the results of the statistical analysis. This is justified by the

[1] Wallace and Naser (1995) advanced a similar conceptual reasoning in support of their using this size measure in their study.

fact that the limitation pointed out by Myers is entirely irrelevant to the context in which this measure is used here. Myers's main concern was to explain why, in practice, banks and other lenders rely on book, rather than market values, of assets in debt agreements. He argued that the "growth opportunity" impounded in the price of a company's share depends on its future discretionary investment which may or may not be realised. As was pointed out by Myers himself, in reality, lenders interest in loan agreements is whether a company is a going concern, not the value of the physical stock of assets that it possesses. In a competitive environment, as it is on some stock markets, the going concern value of the company can only be maintained by positive strategic actions of its management. The management's positive action is of great concern to investors, hence the emphasis of share market value in the investment community.

Distributions of the data on both total assets and market values of equity shares of the sampled companies were explored. The distributions of total assets and equity market values are 2.64 and 4.83 respectively in Panel A of Table 10.1. These measures of skewness suggest that the distributions of both variables are positively skewed. Skewness is concerned with the degree of asymmetry about a mean of a variable. The positive skewness of these variables is also confirmed by the kurtosis measures of 9.01 (for total assets) and 27.27 (for market values) which are greater than zero in each case (the kurtosis measure of a normal population). The result of a Shapiro-Wilk test for normality on the data at 5 per cent significance level for a one-tailed test is reported in Panel B of Table 10.1. The Shapiro-Wilk test statistic, W, for both the total assets and market values of the equity shares are 0.72486 and 0.46579 respectively. The associated indexes for departure from normality, V statistic, are 12.736 (for total assets) and 24.727 (for market values). As indicated in the previous chapter, the median value of V statistic for a sample drawn from a normally distributed population is one (Stata Corporation, 1997). Large values of V statistic indicate non-normality of data distribution. Since the observed V statistics are

large, a normality assumption can not be maintained for both distributions of total assets and market values of the equity shares. Consequently, total assets and market values of the equity shares of the sample companies were logarithmically (of base 10) transformed (Davies and Goldsmith, 1972; Fox, 1990). This normalised the skewness of the two distributions. It must be stressed that the logarithmic transformation, however, does not change the nature and the direction of the relationship between company size and mandatory disclosure. This is because logarithmic transformation is monotonic. The transformation only changes the scale on which company size is measured.

Table 10.1

Descriptive statistics and results of test for normality on company size variables

Description	Statistic	
	Total assets (Z$' 000)	**Capitalised values of equity (Z$' 000)**
Panel A: Descriptive statistics		
Mean	414,045.00	297,254.37
Median	272,803.00	147,857.00
Standard deviation	444,131.65	547,816.01
Minimum	15,309.00	11,250.00
Maximum	2,459,676.00	3,567,464.00
Skewness	2.64	4.83
Kurtosis	9.01	27.27

Panel B: Shapiro-Wilk's test for normality

Variable	*W* statistic	*V* statistic	*Z* statistic	Significance level (one-tailed)
Total assets	0.72486	12.736	5.420	0.000
Capitalised values of equity	0.46579	24.727	6.833	0.000

The mean size of the companies in the sample, measured by both their total assets and market capitalisation, is about Z$414,045 million and Z$297,254 million respectively. While the minimum and maximum total assets are about Z$15,309 million and

Z$2,459,676 million respectively, the same statistics for market values of the outstanding equity shares are about Z$11,250 million and Z$3,567,464 million respectively. The standard deviation for both size measures is about Z$444,132 million (for total assets), and Z$547,816 million (for market value of equity) as shown in Panel A of Table 10.1, indicating a wide variability from the mean in each case.

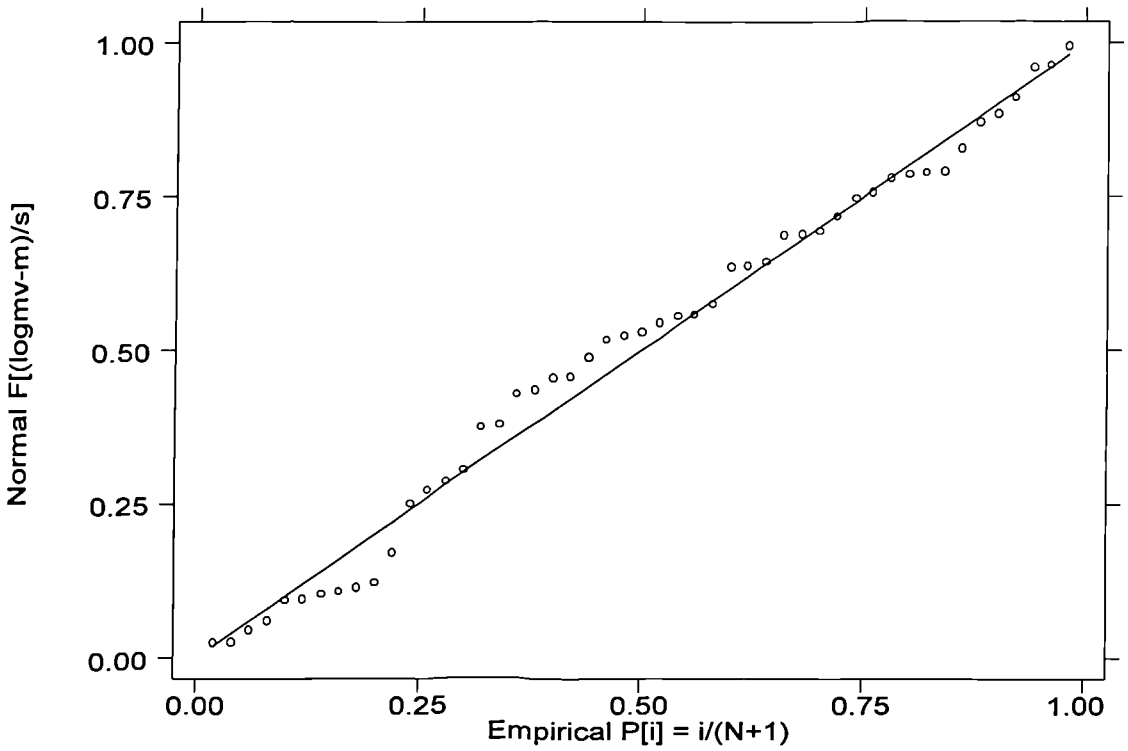


Figure 10.1: Normal probability plot of log market value of equity shares

A Normal probability plot (Q-Q plot) was drawn to evaluate the distribution of the market values resulting from the logarithmic transformation. For each data point in Figure 10.1, the Q-Q plot indicates the observed values and those that would be expected if the data were a sample drawn from a normal distribution. According to Norusis (1994b), a set of data points is considered to be from a normal distribution when the data points cluster around a straight (diagonal) line. As Figure 10.1 shows, the Q-Q plot of the log of market capitalised values is more or less linear, indicating that the assumption of normality appears to be reasonable.

Similarly, a Boxplot (as shown in Figure 10.2) was drawn to assess the distribution of the total assets following the logarithmic transformation. The distribution is symbolised by the rectangular box in Figure 10.2 whose length represents the interquartile range of total assets (Norusis, 1994b). The "whiskers" extending from each side of the box are the largest and the smallest values of total assets of the sample companies. The line in the Boxplot represents the median of the distribution. According to Norusis (1994b, p. 114), the distribution is normal if the median is in the centre of the box. It is, however, skewed if the line is not centred in the box. As Figure 10.2 shows, the median of the values of log total assets is almost in the centre of the box, hence its distribution can be assumed to be normal.

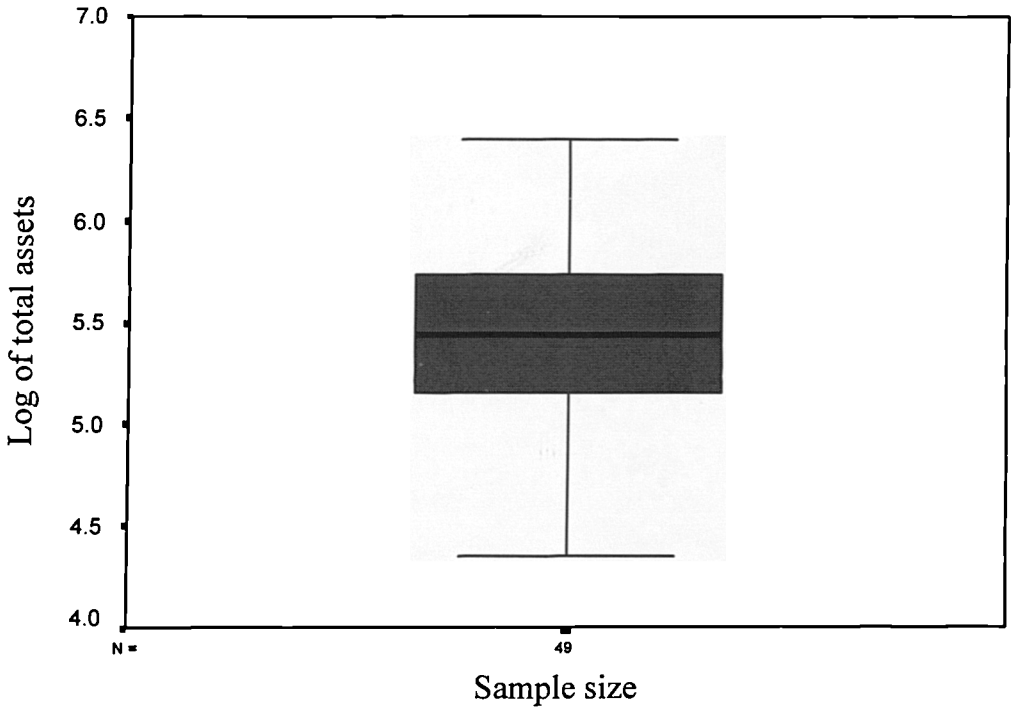


Figure 10.2: Boxplot of log book value of total assets of the sample companies

In short, for Hypothesis 2, the mandatory disclosure scores of the sampled companies were tested against both the log of total assets and market capitalised values of their outstanding equity shares as of 30 September 1994. While the data on market

capitalised values of equity shares of the sampled companies were taken from Remo Investment Brokers (1994), those on total assets were extracted from the 1994 annual reports and accounts of the sampled companies.

Measure of Quality of External Audit for Hypothesis 3

The quality of an audit is not directly observable and difficult to measure empirically. Because of these problems, several researchers have used audit firm size (the Big Six/non-Big Six; formerly the Big Eight/non-Big Eight dichotomy) as a proxy for audit quality (for example, Cerf 1961; Singhvi and Desai, 1971; Wallace, Naser and Mora, 1994). Literature search indicated that the reason given for the use of this dichotomy is that, because the Big Six audit firms have their brand names to protect, they tend to supply higher quality audit services than the non-Big Six audit firms (see, for example, Palmrose, 1988; Davidson and Neu, 1993). In other words, the reputational incentive effect on Big-Six audit firms is higher than that on non-Big Six audit firms. While the reasoning behind the use of Big Six/non-Big Six dichotomy is based on a familiar economic logic of product differentiation (Klein and Leffler, 1981; Shapiro, 1983), this binary division was not used in this study for several reasons.

First, all the external auditors of the companies in the sample except one were Big Six firms. Second, the evidence provided by Shockley and Holt (1983) suggests that the reputational effect may be because the expertise and skills of the Big Six firms differ from one industry to the other. That is, the Big Six audit firms are quality differentiated within any given clients' industry. Because the sampled companies were not drawn from one industry, it was considered inappropriate to employ the Big Six/non-Big Six dichotomy.

Third, when Chow (1983) used a conditional logit analysis and categorised auditors into low and high standard class by the percentage-of-qualified-opinions criterion, he found that only three of the then Big Eight audit firms qualified as high standard

auditors. Fourth, there are non-Big Six audit firms that are equally reputed for high quality audit services as the Big Six audit firms. Indeed, a study conducted by Bavishi and Wyman (1984) in an attempt to find those who audit the world revealed that no single audit firm was world-dominant. They found that a substantial portion of the world's audit service was conducted by thirteen firms.[2]

Finally, membership of the Big Six is not a universal construct. The Big Six firms in, say, Germany (compare with Belgium [Weets and Jegers, 1997]) may not be the same ones in the UK. While the audit firms that are often classed as Big Six in the UK and the US may be identical, they do not often find themselves in the Big Six category in every other country of the world, though this was the case with the Zimbabwean sample in this study.

The original derivation of the Big Six firms is from the study of the market for audit services and the share of that market controlled by the top six firms. It is assumed that the demand for services by corporate entities is constructed on these Big Six firms because of the perception by the corporate entities that the Big Six audit firms provide audit services of better quality than non-Big Six firms. Rather than impose the Big Six firms in the UK and the US on Zimbabwe, and compare them with local audit firms, I decided to derive a Big Two (large) and non-Big Two (small) audit firm classification using concentration ratios derived from the market for audit services in Zimbabwe. A concentration ratio is the extent to which a market is dominated by a few large suppliers.

In this study, the Big Two audit firms are defined as those that certified annual reports and accounts of 22 or more public listed companies in Zimbabwe in 1994. On other hand, non-Big Two audit firms are defined as those that certify annual reports for

[2] The world most dominant audit firms were: Arthur Andersen, Arthur Young, Coopers and Lybrand, Deloitte Haskins and Sells, Ernst and Whinney, Klynveld Main Coerdeler, Peat Marwick Mitchell, Price Waterhouse, Touche Ross, Binder Dijker Otte, Fox Moore International, Grant Thornton International, and Horwath and Horwath International (Bavishi and Wyman, 1984).

less than 22 public listed companies in Zimbabwe in 1994. A market-share analysis of corporate audit in Zimbabwe in 1994 is presented in Table 10.2.

On the basis of this definition, only two audit firms - Deloitte and Touche (30) and Price Waterhouse (22) - qualified as Big Two. As a result, the auditor-type variable relating to a sample company is awarded one if its audit firm was one of the Big Two, and zero if otherwise. While this dichotomisation differs from the prevailing practice in the literature, it is not without precedent. Singhvi (1968, p. 35) and Lee (1994, pp. 238-239) derived and used concentration ratios arising from a study of the audit services market in India and Hong Kong respectively.

Table 10.2

Analysis of audit market-share of public listed companies in Zimbabwe in 1994 (Ranking in parentheses)

External auditor of a listed company	No. of companies audited			Proportion of companies audited to total audit market (%)	Auditor-type classification
	Sample	Non-sample	Total		
Deloitte & Touche	14	5	19	30 (1)	Big Two
Price Waterhouse	12	2	14	22 (2)	Big Two
Ernst & Young	9	4	13	21 (3)	non-Big Two
Coopers & Lybrand	9	2	11	17 (4)	non-Big Two
KPMG Peat Marwick	4	1	5	8 (5)	non-Big Two
Barbour, Robb & O'Connor	1	0	1	2 (6)	non-Big Two
PIM Goldby, S.C.[a]	0	1	1	2 (6)	non-Big Two
Total	49	15	64	100[b]	

[a] An annual report and accounts of one of the companies listed on the ZSE, Falcon Investments S.A., was audited by this accounting firm registered in Luxembourg.

[b] The sum is greater than 100 due to rounding-off individual figures.

Measure of Ownership Structure for Hypothesis 4

Several criteria are used to determine whether a company has a significant representation of outside ownership interests on its share register. The proportion of a

company's outstanding equity shares owned by the largest single ownership unit, the ten largest, or the twenty largest are among the measures usually used to define majority ownership interests.

The hypothesis that ownership structure is related to a company's disclosure practice is tested by examining the proportion of the voting shares of a sample company owned directly and/or indirectly by insiders. Insider ownership is measured here by the ratio of the number of voting shares held directly and/or indirectly by directors and management to the total number of the voting shares outstanding as at December 1994. Insiders are defined here as directors, officers, and all other investors who are related to the management or a board member of a sample company. Proportion of outstanding equity share capital held by relatives of management and/or board member is described by the Zimbabwean Companies Act as indirectly (non-beneficial) held by them, and is required to be disclosed in the annual report and accounts by the company concerned. The annual reports and accounts of the companies in the sample were examined to collect the data for this measure. Five companies did not disclose this information in their 1994 annual reports and accounts. The data for the five companies were extracted from their 1995 annual reports and accounts where 1994 comparative figures were disclosed.

Measure of Industry for Hypothesis 5

A company's industry is defined here as the main economic activity (line of business) in which it derives its revenue. The industrial classification used in this study is different from that used by the ZSE, whose classification of listed companies as either industrial or mining was considered inadequate and inappropriate for this study. This is justified by the fact that the companies listed on the market have significantly different lines of business concentration. In addition, as noted earlier, empirical evidence suggests that quality of disclosure varies across different industries (Dye and Sridhar, 1995). Since

this hypothesis is concerned with mandatory disclosure practices of companies in different industries, it was considered necessary to examine their annual reports and accounts for detailed information about their principal economic activities. This led to the identification of four broad industries, namely, conglomerate, mining, manufacturing, and others into which companies in the sample were accordingly classified. A company was classified as conglomerate if it derives its revenue from more than one industry irrespective of their proportional contribution to the company's annual total revenue. Similarly, a company was segregated into the manufacturing or the mining categories if its principal activity(ies) is (are) manufacturing or mining respectively. Those categorised as "others" are engaged in agricultural, transport, communication, wholesale, retailing, and hoteling businesses. The number and the proportion of companies in each sub-sample to the total sample, and to the entire population is reported in Table 10.3.

Table 10.3

Classification of the sampled companies by principal economic activity

Industry category	Group size	Proportion (%) of total sample (n = 49)	Proportion (%) of population (n = 64)
Conglomerate	22	44.89	34.4
Manufacturing	15	30.61	23.4
Mining	6	12.25	9.4
Others	6	12.25	9.4
Total	49	100.00	

Since there is no *a priori* reasoning to suggest which of these industries will have superior mandatory disclosure (that is, a non-directional hypothesis), the numerical value of at least one of these industries is zero in the specified regression model which treats industry-type as a categorical variable.

Measure of Company Age for Hypothesis 6

A company's age is measured half yearly from flotation date to the financial year ending in 1994. The choice of this measure is influenced by the fact that the ZSE requires listed companies to report to it semi-annually and annually. It is, therefore, reasonable to assume that the decisions of what to disclose and how to disclose it will be taken six monthly. Ideally, a company's date of birth is the day on which it is issued a certificate of incorporation in accordance with the laws of the country of incorporation. In other words, an entity becomes a legal *persona* on the day on which it is issued a certificate of incorporation by the Registrar of Companies. While this should have been the ideal case, many companies tend to be incorporated first as private companies that need not comply with most of the statutory accounting and disclosure rules. For instance, private companies in Zimbabwe need not have their annual accounts audited. On becoming a public entity, on flotation, such companies are required to prepare and publish their annual accounts in accordance with the statutory and non-statutory financial reporting requirements of the ZSE. It follows that to capture adequately the impact of the disclosure requirements of the ZSE on its listed companies, one has to begin from the day they were listed. Hence, the choice of the flotation date in calculating the age of the companies in the sample. The listing files of the ZSE were examined to collect the data for this variable. Table 10.4 presents descriptive statistics, and result of a one-tailed Shapiro-Wilk test for normality done on the data at 5 per cent significance level.

On the basis of above operational definition of age, the mean age of the companies in the sample is 51 half-years, while the standard deviation is about 29 half- years (see Panel A of Table 10.4). On the same basis, the youngest age is 2 half-years, whereas the oldest is 93 half-years, suggesting that some of the companies that were listed on the original market, then known as the Rhodesia Stock Exchange (established in 1945), were still listed on the market as of December 1994.

Although the distribution of the company age measure is negatively skewed as indicated in Panel A of Table 10.4, this variable was not transformed. This is justified by the fact that the observed *V* statistic of the Shapiro-Wilk test performed on this data is not significantly different from that of a normally distributed population to render a normality assumption unreasonable. The *V* statistic for a sample drawn from a normal population is one (Stata Corporation, 1997). Large values of the *V* statistic suggests non-normality of data.

Table 10.4

Descriptive statistics and results of test for normality on company age variable

Panel A: Descriptive statistics (half yearly)

Mean	Median	Standard deviation	Minimum	Maximum	Skewness	Kurtosis
51.14	49.00	28.83	2.00	93.00	-0.193	-1.121

Panel B: Shapiro-Wilk's test for normality

Variable	*W* statistic	*V* statistic	*Z* statistic	Significance level (one-tailed)
Company age	0.93572	2.975	2.322	0.0101

Measure of MNC Affiliation for Hypothesis 7

A company is considered here to be affiliated to a recognised MNC if one of the following criteria is satisfied:

(a) More than 50 per cent of its outstanding equity shares is owned by a recognised MNC; or

(b) A MNC has a significant influence in the financial and operating policy decisions of this company, but not necessarily a control in these policies.

According to the IASC (1995), significant influence is exercised in one of several ways, namely:

(i) the MNC has a representation on the board of directors;

(ii) the MNC has participation in the policy making process, interchange of managerial or technical personnel or dependence on technical information;

(iii) the MNC has power to appoint or remove the majority of the members of the board of directors or equivalent governing body; or

(vi) the MNC has power to cast the majority of votes at meetings of the board of directors or equivalent governing body.

Table 10.5

Classification of companies per industry by multinational corporation affiliation

Industry category	Group size	Affiliated		Non-affiliated	
		No.	%	No.	%
Conglomerate	22	4	18.18	18	81.82
Manufacturing	15	5	33.33	10	66.67
Mining	6	5	83.33	1	16.67
Others	6	1	16.67	5	83.33
Total	49	15	30.61	34	69.39

For purposes of regression analysis, a sample company which fulfils any one of the above criteria is assigned a numeric value of one. A sampled company is assigned a numeric value of zero when none of the above criteria applies. Table 10.5 presents the classification of the sampled companies into those that are affiliated to recognised MNCs and those that are not.

Measure of Profitability for Hypothesis 8

Profitability may be measured in different ways. It is measured here in two ways which captures different dimensions of profitability. First, it is measured by return on turnover which is defined here as the ratio of profit before interest and tax to turnover. This profitability measure is concerned with the operational efficiency and effectiveness of the reporting company. Profit before interest is considered because the primary objective is to assess the operational efficiency of the companies in the sample without regard to how the operations have been financed. Similarly, profit before tax is considered since tax payable depends on individual circumstances of the companies in the sample which may or may not have direct connection with the company's operations.

Second, because existing and potential shareholders are also interested in the overall performance of companies profitability is also measured here by return on capital employed. Return on capital employed relates net profit from operations to resources controlled by management of the reporting company. It is defined here as the ratio of profit after interest and tax to total assets. This definition of return on capital employed is considered appropriate as returns to shareholders are only possible from profits after interest and tax, and also the focus here is on resources in the company no matter how they have been financed. The data for the computation of these profitability measures were extracted from the annual reports and accounts of the companies in the sample.

Measure of Liquidity for Hypothesis 9

Two short-term indicators are generally used to measure a company's ability to generate enough cash to continue in existence. These are current and quick (acid-test) ratios. Of these, only the acid-test ratio is used here as it is a more stringent measure of

corporate liquidity.[3] The acid-test ratio assesses a company's short-term financial strength which excludes stocks from its computation. It is defined as the ratio of current assets less stock to current liabilities.

The acid-test ratio for each sample company was computed from the data disclosed in the annual report and accounts of the company concerned. Using the conventional benchmark of the acid-test ratio of one, companies in the sample whose computed acid-test ratio is at least one are described as liquid, and are categorised as such, and assigned a numeric value of one in the regression model. On the other hand, all companies in the sample whose acid-test ratio is below one are described as illiquid. They are accordingly categorised as such, and assigned a numeric value of zero in the regression model. Table 10.6 presents the industrial categorisation of the sampled companies into those that are liquid and those that are not. About 60 per cent of the sample companies are relatively illiquid by the conventional benchmark of the acid-test ratio. Unsurprisingly, more than half of these companies are conglomerates, followed by manufacturing companies (about a one-third).

In contrast, mining and retailing companies are relatively more liquid. Under normal circumstances these companies, especially those in the retailing business, are expected to be more liquid to meet short-term obligations. Also, such companies have a higher rate of stock turnover; most of which are in cash or cash equivalents.

This observation should not be misconstrued that these illiquid companies are insolvent, as it is possible for a company to be illiquid (has no cash funds) and yet still be solvent if, for example, cash flows from debtors are timed to coincide with cash outflows required to pay immediate debts.

[3] The term "acid test" signifies a severe test. It originated during the period when gold was widely used in circulation. Nitric acid was applied to an object of gold to ascertain whether or not the gold is genuine. If it is fake, the gold is decomposed by the acid; if it is genuine, the gold will be unaffected (Radio Bible Class Ministries, 1996).

Table 10.6

Classification of sampled companies per industry by liquidity status

Industry category	Group size	Liquid		Illiquid	
		No.	%	No.	%
Conglomerate	22	6	27.27	16	72.73
Manufacturing	15	6	40.00	9	60.00
Mining	6	4	66.67	2	33.33
Others	6	4	66.67	2	33.33
Total	49	20	40.82	29	59.18

Summary

This chapter has presented the operational definition of the concept of "stringency" of regulation, and the empirical indicants of the identified corporate attributes. Some of the measures of the attributes are not necessarily the same as those used in other prior studies on disclosure. Nevertheless, the empirical findings can still yield some insights into the external validity of the propositions offered in Chapter VII.

Also, the chapter assessed the distributional characteristics of some of the empirical indicants of the identified corporate attributes with the aid of both univariate descriptive statistics and graphical plots. Where distributional assumptions are violated by the data on an empirical indicant, the data are normalised through logarithmic transformation.

PART D

DATA ANALYSIS AND INTERPRETATION

CHAPTER XI

UNIVARIATE STATISTICAL ANALYSIS AND RESULTS

> There is never certainty in science, and the weight of evidence for or against a hypothesis can never be assessed completely 'objectively.'
> (Friedman, 1953, p. 30)

> I examine the data, as an expert, and pronounce a specialist's opinion.
> (The Sign of the Four, quoted in Casley and Lury, 1981, p. 148)

This chapter describes the statistical methods employed to analyse research question one and the testable hypotheses developed in Chapter VII for research questions two and three. It describes and explains the appropriateness of the statistical tests used, and then report the results of these tests. It also interprets the results in the context of the hypotheses and the characteristics of the Zimbabwean socio-economic environment. Further, it compares the results of this study with some prior disclosure studies.

Statistical Tests Relating to the Major Hypotheses

I employed two principal statistical methods to test: (1) the implications of the second research question (Hypothesis 1); and (2) the characteristics (direction and strength) of the hypothesised relationships between mandatory disclosure (measured by the relative disclosure scores) and the eight identified corporate attributes. These methods are: (1) test of association, and (2) test of difference. The use of each method was dictated by the nature of each testable hypothesis which is influenced by the scale of measurement of the empirical indicants of the variables involved. While the test of association was employed on Hypotheses 2, 4, 6, and 8, the test of difference was applied on Hypotheses 1, 3, 5, 7, and 9. For instance, because company size is

measured by log capitalised values of equity shares and log total assets which are both in ordinal scale, Hypothesis 2 is analysed by two test of association techniques. Table 11.1 lists each of the eight corporate attributes examined, their empirical indicants and descriptive statistics, and notations used in the regression model in the next chapter.

Table 11.1

Summary of corporate attributes, proxies, notations used, and descriptive statistics

Corporate attribute examined	Proxy of corporate attribute	Notation used	Mean	Standard deviation
Company size	Log of capitalised equity values Log of total assets	Size	5.463 5.419	0.466 0.443
Audit quality	Concentration ratio	Audit	0.531	0.504
Ownership structure	Proportion of equity shares held by corporate insiders	Hold	6.699	15.388
Industry type	Principal economic activity(ies)	Indus	1.918	1.038
Company age	Half-yearly since flotation date to December 1994	Age	51.143	28.827
MNC affiliation	Either ownership of more than half of the share capital or the presence of significant influence	Multi	0.306	0.466
Profitability	Returns on turnover Return on capital employed	Profit	16.584 9.380	9.336 7.401
Liquidity	Acid-test ratio	Liquid	0.388	0.492

Also, in all cases, both parametric and non-parametric inferential statistics were employed. Generally, parametric statistical techniques are only suitable when the data is measured either on interval or ratio scale, and normally distributed. If, however, the measurement of scale is either ordinal or nominal, then non-parametric counterparts are appropriate. The relationship between measurement scale and the appropriate statistical procedures is the product of Steven's (1946, 1951) work on measurement theory. Although this relationship is acceptable to some social scientists (for example, Siegel

and Castellan, 1988), mathematical statisticians have fiercely criticised it (for example, Anderson, 1961; Gaito, 1980). Anderson (1961) has stressed that the choice of a statistical test should be governed purely by statistical considerations. Gaito (1980, pp. 566-567) succinctly summarised the position when he concluded:

> In mathematical statistics literature one will not find scale properties as a requirement for the use of the various statistical procedures. This requirement was merely a figment of the imagination of a number of psychologists because of a confusion of measurement theory and statistical theory. Statistical procedures do not require specific scale properties.
>
> Thus, although Stevens did a service for measurement theory in developing scale ideas, his intention led to a misconception that has been difficult to eliminate.

Gregoire and Driver (1987) provide empirical evidence that using parametric techniques on data measured in ordinal scale poses no great problems. Davison and Sharma (1988) have also argued that the assumptions of normality, independence, and homogeneity of variances are the most essential requirements for the use of parametric techniques. Earlier, Gaito (1980, p. 567) made a similar point using the One-way analysis of variance (ANOVA) as an illustration.

Quite apart from the above, the two statistical techniques were employed here to overcome any potential bias of a single-method approach. Denzin (1970, p. 297) describes the use of different research techniques to study a particular phenomenon as *triangulation*. He argues that triangulation should lead to greater validity and reliability than a single-method approach, if the conclusions of the different approaches are the same. It must be stressed, however, that methodological triangulation is not a substitute for a poor research design.

For the test of association, both parametric Pearson product-moment and non-parametric Spearman rank-order correlation procedures were used (for Hypotheses 2, 4, 6, and 8). These procedures measure the direction and the strength of linear relationship

between two variables. Thus, they provide an index which describes succinctly the characteristics of the association between mandatory disclosure and company size, equity ownership structure, company age, and profitability. For the test of difference, the parametric Two-independent sample *t* test (for Hypotheses 3, 7, and 9), Paired-samples *t* test (for Hypothesis 1), and ANOVA test (for Hypothesis 5) were used. The analogous non-parametric techniques employed were Mann-Whitney *U* test (for Hypotheses 3, 7, and 9), Wilcoxon-signed rank test (for Hypothesis 1), and Kruskal-Wallis one-way analysis of variance by ranks (for Hypothesis 5).

The parametric *t* tests indicate the extent to which two independent or related groups need to differ on a variable of interest before a null hypothesis of no difference can be rejected. They require that the data have been derived from normal distributions with equal variance. The ANOVA test shares similar assumptions as the *t* tests, but it measures the extent to which three or more groups differ on a population parameter, say, the mean.

The non-parametric Mann-Whitney and Kruskal-Wallis tests require neither homogeneity of variance nor that the data be normally distributed. But, while the former assesses the difference in mean ranks between two groups to determine whether they were so disparate that they could not have been drawn *from the same population*, the latter assesses the difference in mean ranks among three or more groups (Siegel and Castellan, 1988). For the convenience of presentation, the Wilcoxon test is described in detail below.

Results of Statistical Tests and Interpretation

"Adequacy" of Mandatory Disclosure Practices

This section presents and interprets the statistical results for the first research question: "Can the mandatory disclosure practices of the ZSE listed companies be

considered 'adequate' in meeting the information needs of users of corporate annual reports?" In general, the disclosure scores earned by the companies in the sample suggest that the amount and quality of information provided in their annual reports and accounts are adequate for the users of these reports. This finding is similar to those reported for similar emerging economies such as India (see Marston, 1986), and Nigeria (see Wallace, 1987). The disclosure scores of the sample companies in the present study range from a minimum of 63 per cent to a maximum of 85 per cent. Wallace (1987), for instance, reported disclosure scores ranging from a minimum of 35 per cent to a maximum of 52 per cent.[1] Table 11.2 presents frequency distribution of the disclosure scores of the companies in the sample.

Table 11.2

Frequency distribution of mandatory disclosure scores of sample companies

Mandatory disclosure score %	No. of companies	Proportion of sample %
90 and above	0	0.00
Between 80 and 90	7	14.29
Between 70 and 81	31	63.26
Between 60 and 71	11	22.45
Less than 61	0	0.00
Total	49	100.00

There was great variability in the extent of disclosure among both the sampled companies and the mandated information items. About 63 per cent of the companies in the sample disclosed between 70 and 81 per cent of what were required of them under the disclosure regulatory regime (see Appendix C for details). While only a little over

[1] Although the findings of the present study have been compared with those of Marston (1986) and Wallace (1987), it should be stressed, however, that the countries studied have differing socio-economic environments and were also studied at different times. For instance, while Nigeria was studied in 1985 when its economy was booming, Zimbabwe is investigated in 1994 when its economy was recovering from recession caused by bad weather.

14 per cent of the sampled companies disclosed between 80 and 90 per cent of the applicable mandated information items, about 22 per cent disclosed between 60 and 71 of what were expected of them. None of the sample companies scored below 61 per cent or 90 per cent and above. Although none of the companies scored 90 per cent and above (as the case in Bangladesh studied by Ahmed and Nicholls, 1994), the scores earned by them are, in general, commendable.

A plausible explanation for the differing disclosure by the sample companies is their differing response to regulations probably due to their differing individual circumstances. For example, some companies may choose to do nothing, either because they are already in compliance (that is, they were disclosing this information voluntarily before the introduction of the regulation) or because compliance will be too costly. In addition, some companies may make major investments to meet the new requirements, while still others may make only a modest effort to comply.

A different picture emerged when the disclosure scores were disaggregated on the basis of the source of requirement. For the purposes of policy recommendation, the disclosure items were categorised into three sub-groups on the basis of their regulatory origin. This procedure enabled me to pin-point disclosure items and regulatory sources which were complied with, and those which were not. Policy makers in Zimbabwe can then focus their attention on those items that were not being disclosed and the regulatory source(s) where corporate response to regulation appears less satisfactory. Table 11.3 presents the result of the disaggregation analysis. The figures under the column titled "Sampled Companies Required to Disclose" represent the number of companies which on the basis of their annual reports and accounts were expected under the regulatory regime to disclose a particular disclosure item. These items could be disclosed at varying levels of completeness (or fullness). As a result, those sample companies required to disclose a particular item were categorised into two: (1) those not disclosing

Table 11.3

Distribution of mandatory disclosure scores by source of requirement

Source of regulatory requirements/ Mandated disclosure item†	No. of sampled companies not required to disclose	Sampled Companies required to disclose		Companies not disclosing all applicable mandated items		Companies disclosing all the applicable mandated items	
		No.	%	No.	%	No.	%
Accounting Standard:							
IAS2	0	49	100	2	4	47	96
IAS4	0	49	100	4	8	45	92
IAS5	0	49	100	14	29	35	71
IAS7	0	49	100	7	14	42	86
IAS8	2	47	100	2	4	45	96
IAS9	41	8	100	2	25	6	75
IAS10	5	44	100	35	80	9	20
IAS11	45	4	100	2	50	2	50
IAS12	0	49	100	35	71	14	29
IAS14	2	47	100	47	100*	0	0
IAS16	1	48	100	48	100*	0	0
IAS17	45	4	100	4	100*	0	0
IAS18	0	49	100	0	0	49	100**
IAS19	0	49	100	8	16	41	84
IAS21	3	46	100	36	78	10	22
IAS22	42	7	100	5	71	2	29
IAS23	7	42	100	26	62	16	38
IAS24	2	47	100	30	64	17	36
IAS25	18	31	100	24	77	7	23
IAS26	0	49	100	47	96	2	4
IAS27	8	41	100	10	24	31	76
IAS28	30	19	100	12	63	7	37
Companies Act:							
Section 123	0	49	100	1	2	48	98
7th Schedule[i]	0	49	100	33	67	16	33
Section 124	0	49	100	42	86	7	14
7th Schedule[ii]	46	3	100	3	100*	0	0
ZSE Rule:							
Paragraph 7[iv]	31	18	100	1	6	17	94
Paragraph 9	0	49	100	32	65	17	35
Paragraph 9	0	49	100	8	16	41	84
IASs 21 & 23	25	24	100	24	100*	0	0

† Appendix B provides full description of each of these mandated disclosure items.

* Denotes a complete failure to disclose the required information.

** Denotes a full compliance with disclosure requirements.

all the sub-items (the column titled "Companies Not Disclosing All Applicable Mandated Items"), and (2) those disclosing *all* the sub-items (the column titled "Companies Disclosing All The Applicable Mandated Items"). For example, with regard to the disclosure items, some required information items under *Revenue Recognition (IAS18)*, *Signing and Publishing Accounts (Section 123 of Companies Act)*, *Inventories (IAS2)*, and *Employees Share Schemes (Paragraph 7[iv] of the ZSE Rules)* were disclosed in an overwhelming majority of cases. While certain required applicable information items were satisfactorily provided in the annual reports and accounts of the sample companies; a greater proportion of the items in the disclosure template was inadequately disclosed. The sample companies failed completely in five instances (100 per cent non-compliance) to disclose the applicable information required of them under the regulatory regime.

Surprisingly, most of the sample companies did not fully disclose the information required under *Properties, Plant and Equipment (IAS 16)*. Similarly, the observed segmental reporting was far below the regulatory minima (*Segmental Reporting [IAS 14]*). About 45 per cent of the total sampled companies were well diversified in terms of both business activity and market (see Table 10.3). But this feature was not matched by a corresponding disclosure which adequately cover the different segments of their operations. Users of corporate financial reports, especially investors, require adequate information on the asset base of a company, and the rates of growth, profitability and risk of the different segments of its operations to evaluate its risk-return profile.

Furthermore, in spite of the country's tight foreign exchange control policy, none of the 24 sampled companies, expected under the regulatory regime (*Supplementary Requirement for Foreign Borrowings: IASs 21 and 23*), to fully disclose the required information, did so.

As Table 11.3 also shows, more IASs disclosure items were not complied with by the sample companies. This finding is surprising as the APC emphasis more on compliance with the adopted IASs in its enforcement and monitoring efforts than the requirements under the Companies Act and the stock exchange listing agreement. The evidence in Table 11.3 indicates that the disclosure practices of the companies listed on the ZSE are inadequate for the information needs of users of corporate annual reports.

In spite of the above findings, I observed several voluntary disclosure of information items that were not required under the regulatory regime. They range from information items in statements of value added to social and environmental disclosure. This makes one wonder why companies will not comply with mandatory requirements, but will voluntarily disclose what are not required of them.

"Stringency" of Regulatory Regime (Hypothesis 1)

This section reports the results from the test of Hypothesis 1 (that is, research question two: "Can the extent of mandatory disclosure practices of the listed companies be ascribed to the stringency of disclosure requirements of the ZSE?"). It measures the degree of compliance with the mandatory disclosure requirements of the ZSE by the sample listed companies. Because compliance with regulatory requirements depends on rigorous monitoring and enforcement efforts of the regulator, this would also be a measure of the stringency of the regulatory disclosure regime of the ZSE. Thus, the stringency of the disclosure regulatory regime of the ZSE is empirically assessed by comparing the distribution of what listed companies are expected to disclose with the distribution of what they actually disclose. Since this study focuses on mandatory disclosure, a score earned by a sample company on the index is interpreted as its disclosure regulatory compliance level. Consequently, the observed compliance level is measured here by the actual disclosure score earned by a sample company, and the

expected compliance level is measured by the maximum possible score that a sample company could have earned on the index.

Also, because the expected and the observed disclosure compliance levels are functionally related (Pearson product moment correlation coefficient is 0.902, and associated p value = 0.00), a Wilcoxon signed-ranks two-tailed procedure, and its parametric counterpart, the Paired-samples t test were employed to test statistically whether the mean difference between the two distributions is due to the stringency of the regulatory regime or merely to chance. The non-parametric inferential statistic test of Wilcoxon signed-ranks is preferred to an alternative procedure, the Sign test, for two reasons. First, unlike the Sign test, its power-efficiency does not depend on the size of the sample whether it is small or large (Siegel and Castellan, 1988). This study's sample size is small. The use of the Wilcoxon signed-ranks test, therefore, gives an assurance that Type II error (that is, accepting a false null hypothesis) is less likely to be committed because of the small sample size of the study. In other words, the Wilcoxon signed-ranks test provides a higher probability of rejecting a false null hypothesis regardless of the sample size. Second, the scale of measurement of both the expected and the observed disclosure compliance levels is ordinal both "within" and "between" matched pairs (Siegel and Castellan, 1988).

The Wilcoxon signed-ranks test is primarily concerned with both "the direction of differences and the relative magnitude" between the values of the expected disclosure compliance level and those of the observed disclosure compliance level (Siegel and Castellan, 1988). It computes the differences between pairs of values of the expected disclosure compliance levels and the observed disclosure compliance levels of the sampled companies, and ranks the absolute differences. Tied values are assigned the average rank. It adds together the ranks for both positive and negative differences, and then computes the test statistic from these rank sums. It, then, focuses on the largest of

these observed deviations to determine the overall significance of the discrepancy between the two cumulative distributions (Siegel and Castellan, 1988). If both the expected and the observed disclosure compliance levels were drawn from populations with the same median, their cumulative distributions will be fairly close to each other. On the other hand, if they were drawn from populations with different medians, their cumulative distributions will be widely apart. A large observed significant difference thus provides an evidence to reject the null hypothesis.

Table 11.4

Results of tests for equality of means of expected and observed compliance levels

Panel A: Descriptive statistics

Score	No. of observation	Mean	Standard deviation	Standard error of mean	Percentiles 25th	50th	75th
Actual	49	76.14	11.37	1.62	68	76	81
Maximum possible	49	101.98	13.21	1.89	91	103	109

Panel B: Paired samples correlation

Correlation coefficient	Significance level
0.902	0.000

Panel C: Paired t test of equality of paired differences

Mean	Standard deviation	Standard error	95% confidence interval	*t* value	Degrees of freedom	Significance level (2-tailed)
-25.84	5.73	0.82	-27.48 – -24.19	-31.58	48	0.000

Panel D: Wilcoxon signed-rank test

Sign	Mean rank	Sum of ranks	Expected rank	*Z* statistic	Significance level (2-tailed)
Positive	25.00	1225.00	612.50		
Negative	0.00	0.00	612.50		
Ties	0.00	0.00	0.00	-6.096	0.000

The results of both the Paired *t* test and Wilcoxon signed-ranks test are reported in Table 11.4. These results provide empirical evidence to reject Hypothesis 1. Thus,

the null hypothesis that there is no significant difference between actual disclosure practices of companies listed on the ZSE and the desired practice under the stock exchange disclosure requirements was not supported by the data. Low level of disclosure compliance has also been noted in emerging economies such as Nigeria (Wallace, 1988), Hong Kong (Tai et al., 1990) and Bangladesh (Ahmed and Nicholls, 1994).

Relationships Between Corporate Attributes and Mandatory Disclosure

This section presents and discusses the results of the statistical testing of Hypotheses 2 to 9 which relate to the third research question: "Can the differences in mandatory disclosure practices of the companies listed on the ZSE be explained in terms of certain corporate attributes?"

Company size and mandatory disclosure (Hypothesis 2)

The hypothesis that the extent of the average company's mandatory disclosure practice does not associate with the mean size of the companies in the sample was analysed with both Pearson product-moment and Spearman rank-order correlation tests. The results of both tests are reported in Table 11.5. Although not significant, the correlation coefficient between company size measured by log of capitalised values of equity (log of total assets) are 0.050 (0.056) and 0.046 (0.067) respectively with Pearson product-moment and Spearman rank-order tests. The results suggest that mean company mandatory disclosure practices associate positively with mean corporate size; however size was measured.

Thus, Hypothesis 2 is not substantiated. It is, however, not significant at the conventional levels (only the results at the 5 per cent level of significance are reported here). While not significant, the results are in agreement with previous findings reported in the literature such as Wallace (1987, 1988), and Patton and Zelenka (1997).

Table 11.5

Results of tests of association between mandatory disclosure and company size

Panel A: Log of capitalised values of equity as size variable		
	Pearson product-moment	**Spearman rank-order**
Correlation coefficient	0.050	0.046
Significance level (2-tailed)	0.732	0.753
Panel B: Log of total assets as size variable		
	Pearson product-moment	**Spearman rank-order**
Correlation coefficient	0.056	0.067
Significance level (2-tailed)	0.702	0.646

Audit quality and mandatory disclosure (Hypothesis 3)

Both a *t* test and a Mann-Whitney *U* test were used to examine the hypothesis that there is no difference between the mean extent of mandatory disclosure practices of sample companies audited by large (Big Two) audit firms and those audited by small (non-Big Two) firms. The results of the *t* test are reported in Panel C of Table 11.6. Since the assumption of equal variance by the two groups does not hold, as indicated in Panel B by Levene's test for homogeneity of variances (*F* statistic is not significant [*p* value = 0.536, see Panel B of Table 11.6]), the *t* value calculated with the separate variance estimates (Unequal variances) was considered appropriate. As can be seen, the *t* value of 0.06 is not significant (2-tail probability is 0.949). The result thus indicates that the difference between the means of mandatory disclosure indexes for companies audited by large audit firms, and those audited by small audit firms of 74.38 and 74.48 with standard deviations of 4.61 and 5.43 respectively (see Panel A of Table 11.6) was not significantly different. In effect, there was no statistically significant difference between companies audited by the Big Two independent external auditors and companies audited by the non-Big Two independent external auditors, in how they disclosed mandated information items in their annual reports and accounts. Thus,

Hypothesis 3 was supported. This result was also confirmed by the results of the non-parametric Mann-Whitney U test reported in Table 11.6 (Panel D). The *U* statistic represents the number of times a rank value in the non-Big Two group precedes a rank value in the Big Two group (Norusis, 1990). Because the sample size of this study is more than 30, the significance level associated with the *U* statistic is transformed into a normally distributed *Z* statistic (Norusis, 1990, p. 400). The numerical value of the *Z* statistic which was not significant (*p* value = 0.9199) is -0.1006.

Table 11.6

Results of tests for equality of means of mandatory disclosure by auditor-type

Panel A: Descriptive statistics

Group	Group size	Mean	Mean difference	Standard deviation	Standard error of mean
Non-Big Two	23	74.4783		5.434	1.133
Big Two	26	74.3846	0.936	4.614	0.905

Panel B: Levene's test for equality of variances

F statistic	Significance level (2-tailed)
0.388	0.536

Panel C: t test for equality of means

Variance	*t* value	Degrees of freedom	Significance level (2-tailed)	Standard error of difference	95% confidence interval for difference
Equal	0.07	47	0.948	1.435	-2.795 – 2.982
Unequal	0.06	43.45	0.949	1.450	-2.831 – 3.019

Panel D: Mann-Whitney U test

Group	Group size	Mean rank	*U* statistic	Corrected for ties	
				Z statistic	Significance level (2-tailed)
Non-Big Two	23	25.22			
Big Two	26	24.81	294.0	-0.1006	0.9199

While the results are consistent with those reported by Singhvi (1968), Tai et al. (1990), Malone, Fries and Jones (1993), and Wallace, Naser and Mora (1994), they do not support the conclusions in Cerf (1961), Singhvi and Desai (1971), and Patton and Zelenka (1997).

Ownership structure and mandatory disclosure (Hypothesis 4)

The hypothesis that the percentage of equity shares held by corporate insiders does not associate with the extent of mandatory disclosure practices of their companies was examined with both Pearson product-moment and Spearman rank-order correlation tests. The results of the two tests as presented in Table 11.7 are mixed. While the results from the Pearson product-moment correlation test indicate the existence of a positive association between insider equity holding and mandatory disclosure, the Spearman rank-order correlation test suggests no association. Both are, however, not significant. These findings question the implications of the agency theory for mandatory disclosure. In particular, the positive association casts doubt on the general assumption that in countries where the state (for example, China), banks (for example, Germany and Japan) or certain families (for example, Hong Kong) hold greater proportion of equity shares there is generally low public disclosure. While this assumption may, perhaps, hold in the case of voluntary disclosure, it may not be so with mandatory disclosure. This proposition is partly supported by the "no association" results from the Spearman rank-order correlation test.

Table 11.7

Results of tests of association between disclosure and ownership structure

	Pearson product-moment	**Spearman rank-order**
Correlation coefficient	0.090	0.000
Significance level (2-tailed)	0.538	0.999

Industry-type and mandatory disclosure (Hypothesis 5)

The hypothesis that the extent of mandatory disclosure of the sample companies is the same irrespective of the industry to which they belong was tested with both a One-way ANOVA, and a Kruskal-Wallis one-way analysis of variance. The results of both tests are reported in Table 11.8. The second column of Panel C, sum of squares, is a measure of variation. The total variation in disclosure is 1182. It is derived from two sources: (1) the *between-groups* variation which measures how much sample means vary between (or across) the groups is 157.87; and (2) the *within-groups* variation which tells how much the observations within a group vary is 1024.13. The F statistic is 2.3123 which is not significant at the 0.05 level. Implicitly, Hypothesis 5 is supported because the *between-groups* estimate of variance is too small compared with the *within-groups* estimate of variance (Kleinbaum, Kupper and Muller, 1987, p. 351; Norusis, 1994b, p. 286). That is, there are no significant differences in the mean disclosure practices of the sample companies in the four industrial groupings, and as a consequence, the null hypothesis can not be rejected.

Although the F statistic suggests no significant differences in the mandatory disclosure practices of the groups, *a posteriori* Scheffe multiple-comparisons test was undertaken. The Scheffe test was chosen over Tukey and Bonferroni multiple-comparisons tests, because the sizes of the industrial groups being compared in this study are unequal, and also a pair-wise comparison was desirable (for detailed discussion on this, see Kleinbaum, Kupper and Muller, 1987, pp. 361-374). The Scheffe multiple-comparison procedure compares each possible pair of means of the industrial groupings, and then indicates which ones exhibit statistically significant differences. The results of the Scheffe test (reported in Panel E of Table 11.8) lend

support to the above conclusion. Also, because the assumption of equal variance[2] was not supported (Panel B of Table 11.8), the non-parametric counterpart, Kruskal-Wallis test, was performed. The Kruskal-Wallis *H* statistic which has approximately a chi-square distribution (Norusis, 1990) is 7.6720. The observed 2-tailed significance level of the Kruskal-Wallis *H* statistic is 0.0533 (Panel D of Table 11.8), which again leads me not to reject the hypothesis of no difference. These results are consistent with the conclusions in Tai et al. (1990), Cooke (1992) and Patton and Zelenka (1997). They do not, however, corroborate the conclusions in Stanga (1976), and Fekrat, Inclan and Petroni (1996).

Table 11.8

Results of tests for equality of means of mandatory disclosure by industry-type

Panel A: Descriptive statistics

Group	Group size	Mean	Standard deviation	Standard error	95% confidence interval for mean
Conglomerate	22	72.73	4.76	1.02	70.62 – 74.84
Manufacturing	15	76.93	3.86	1.00	74.79 – 79.07
Mining	6	74.50	7.45	3.04	66.68 – 82.32
Others	6	74.33	3.50	1.43	70.66 – 78.01

Panel B: Levene's test of homogeneity of variances

Statistic	Degrees of freedom (1)	Degrees of freedom (2)	Significance level (2-tailed)
1.6689	3	45	0.187

Panel C: One-way analysis of variance test

Source of variation	Sum of squares	Degrees of freedom	Mean squares	*F* statistic	Significance level (2-tailed)
Between groups	157.8697	3	52.623		
Within groups	1024.1303	45	22.758		
Total	1182.0000	48	–	2.3123	0.0888

[2] Gaito (1980, p. 567) and Davison and Sharma (1988) have emphasised the importance of fulfilling this requirement for an ANOVA test.

Table 11.8 (Continued)

Results of tests for equality of means of mandatory disclosure by industry-type

Panel D: Kruskal-Wallis one-way analysis of variance test

Group	Group size	Mean rank	*H* statistic	Corrected for ties	
				Degrees of freedom	Significance level (2-tailed)
Conglomerate	22	19.59			
Manufacturing	15	32.77			
Mining	6	24.67			
Others	6	25.75	7.6720	3	0.0533

Panel E: Scheffe multiple comparisons test

Group (A)	Group (B)	Mean difference (A - B)	Standard error	Significance level (2-tailed)	95% confidence interval
Others	Mining	-0.17	2.754	1.000	-8.17 – 7.83
	Manufacturing	-2.60	2.304	0.736	-9.29 – 4.09
	Conglomerate	1.61	2.197	0.911	-4.78 – 7.99
Mining	Others	0.17	2.754	1.000	-7.83 – 8.17
	Manufacturing	-2.43	2.304	0.774	-9.13 – 4.26
	Conglomerate	1.77	2.197	0.884	-4.61 – 8.15
Manufacturing	Others	2.60	2.304	0.736	-4.09 – 9.29
	Mining	2.43	2.304	0.774	-4.26 – 9.13
	Conglomerate	4.21	1.597	0.089	-0.43 – 8.85
Conglomerate	Others	-1.61	2.197	0.911	-7.99 – 4.78
	Mining	-1.77	2.197	0.884	-8.15 – 4.61
	Manufacturing	-4.21	1.597	0.089	-8.85 – 0.43

Company age and mandatory disclosure (Hypothesis 6)

The hypothesis that the extent of a company's mandatory disclosure practices does not associate with its age was examined with both Pearson product-moment and Spearman rank-order correlation tests. The results of these two tests are reported in Table 11.9. Clearly, Hypothesis 6 can be rejected as the correlation between mandatory disclosure and company age is positive and moderate. However, while the association between the two variables is significant at the 0.05 level per the Pearson product-moment test, it is not significant per the Spearman rank-order correlation test. The inconsistency between the results of the two tests is explained by the fact that the

Spearman rank-order correlation test is less sensitive to extreme values (Stata Corporation, 1997, p. 238). In spite of the difference between the two tests, the positive, though, weak association between mandatory disclosure and company age reported here is inconsistent with the findings of Henderson (1969).

Table 11.9

Results of tests of association between mandatory disclosure and company age

	Pearson product-moment	Spearman rank-order
Correlation coefficient	0.287	0.248
Significance level (2-tailed)	0.045	0.085

MNC affiliation and mandatory disclosure (Hypothesis 7)

The hypothesis that the mean extent of mandatory disclosure practices of sample companies that are affiliated with foreign MNCs and those that are not affiliated with foreign MNCs is the same was analysed with a *t* test, and a Mann-Whitney *U* test. The results of both tests, reported in Table 11.10, suggest that there is no significant differences in the disclosure practices between the companies affiliated with MNCs and those that are not (*t* value = -0.80, *Z* statistic = -1.4708; and their associated observed *p* values are respectively 0.430 and 0.141 reported in Panels C and D of Table 11.10). Thus, Hypothesis 7 is supported.

Table 11.10

Results of tests for equality of means of mandatory disclosure by MNC affiliation

Panel A: Descriptive statistics

Variable	Group size	Mean	Mean difference	Standard deviation	Standard error of mean
Not-affiliated	34	74.0294		4.770	0.818
Affiliated	15	75.3333	-1.3039	5.434	1.403

Table 11.10 (Continued)

Results of tests for equality of means of mandatory disclosure by MNC affiliation

Panel B: Levene's test for equality of variances

F statistic	Significance level (2-tailed)
0.936	0.338

Panel C: t test for equality of means

Variance	*t* value	Degrees of freedom	Significance level (2-tailed)	Standard error of difference	95% confidence interval for difference
Equal	-0.85	47.00	0.402	1.543	-4.408 – 1.800
Unequal	-0.80	23.96	0.430	1.624	-4.657 – 2.049

Panel D: Mann-Whitney U test

Group	Mean rank	Sum of ranks	*U* statistic	Corrected for ties	
				Z statistic	Significance level (2-tailed)
Not-affiliated	23.01	782.50			
Affiliated	29.50	442.50	187.50	-1.4708	0.1413

Profitability and mandatory disclosure (Hypothesis 8)

The hypothesis that a sample company's profitability level does not relate to the extent of its mandatory disclosure practices was investigated with both parametric technique of Pearson product-moment correlation test and its non-parametric alternative, the Spearman rank-order correlation test.

Table 11.11 reports the results of the two tests for the two profitability measures (return on turnover, and return on capital employed). For the return on turnover measure, the correlation coefficients are 0.037 and 0.073 respectively for Pearson product moment and Spearman rank-order test. Those for the return on capital employed measure of the Pearson product moment and Spearman rank-order tests are 0.087 and -0.030 respectively. Except for the result of profitability measured by return on capital and tested with the Spearman rank-order correlation technique, the other

results suggest that the correlation between mandatory disclosure and profitability is positive, though insignificant, whatever the testing procedure; and regardless of the profitability measure used.[3] Thus, Hypothesis 8 is not supported. The positive relationship, suggested by these results, corroborate the conclusion in Cerf (1961), Singhvi (1968), Singhvi and Desai (1971), and Patton and Zelenka (1997).

Table 11.11

Results of tests of association between mandatory disclosure and profitability

Panel A: Return on turnover as profitability variable		
	Pearson product-moment	**Spearman rank-order**
Correlation coefficient	0.037	0.073
Significance level (2-tailed)	0.802	0.620
Panel B: Return on capital employed as profitability variable		
	Pearson product-moment	**Spearman rank-order**
Correlation coefficient	0.087	-0.030
Significance level (2-tailed)	0.551	0.838

Liquidity and mandatory disclosure (Hypothesis 9)

The hypothesis that there is no difference between the mean extent of mandatory disclosure of the sample companies that are liquid and those that are not was analysed with both a *t* test and a Mann-Whitney *U* test. The results of the two tests are respectively reported in Panels C and D of Table 11.12. Because the hypothesis that all group variances are equal is not supported by the empirical data (*F* statistic = 0.416; *p* value = 0.522 [in Panel B of Table 11.12]), the separate-variance estimate (Unequal variances in Panel C) is used in interpreting the result of the *t* test. The statistic (0.84) for the separate-variance *t* test for equality of means is not significant at the 95 per cent

[3] As stated earlier on page 261, the inconsistency of the results between Pearson product moment and Spearman rank-order correlation tests is due to the fact that the latter is less sensitive to extreme values.

confidence interval level. Thus, Hypothesis 9 is supported.

The finding that there is no statistically significance difference between liquid and illiquid sample companies in their mandatory disclosure practices is also confirmed by the results of the Mann-Whitney test reported in Panel D of Table 11.12. The *Z* statistic (-0.691), corrected for ties, from this non-parametric test is not significant (2-tailed probability is 0.490). While these results are consistent with the conclusion in Wallace and Naser (1995), they contradict those reported by Belkaoui and Kahl (1978).

Table 11.12

Results of tests for equality of means of mandatory disclosure by liquidity

Panel A: Descriptive statistics

Variable	Group size	Mean	Mean difference	Standard deviation	Standard error of mean
Illiquid	30	73.9333		4.593	0.839
Liquid	19	75.2105	1.2772	5.534	1.269

Panel B: Levene's test for equality of variances

F statistic	Significance level (2-tailed)
0.416	0.522

Panel C: t test for equality of means

Variances	*t* value	Degrees of freedom	Significance level (2-tailed)	Standard error of difference	95% confidence interval for difference
Equal	0.88	47.00	0.386	1.458	-1.658 – 4.212
Unequal	0.84	33.21	0.407	1.521	-1.819 – 4.373

Panel D: Mann-Whitney U test

Variable	Group size	Mean rank	*U* statistic	Corrected for ties	
				Z statistic	Significance level (2-tailed)
Illiquid	30	23.88			
Liquid	19	26.76	251.50	-0.6905	0.4899

Summary

This chapter has been concerned with the relationships between types of measurement scales and statistical tests. It thus compared parametric and non-parametric statistics on the basis of measurement theory. It was concluded that the type of measuring scale used had little relevance to the question of whether to use parametric or non-parametric techniques.

The chapter also presented the results of the univariate statistical tests performed on the first research question, and the testable hypotheses developed for the second and third research questions. The analysis for the first research question suggests that mandatory disclosure in corporate annual reports and accounts of listed public companies in Zimbabwe vary considerably, and is inadequate for the information needs of users of annual report and accounts in Zimbabwe. For the second and the third research questions, excepting the result suggesting a significant correlation test between mandatory disclosure indexes and company age, no other corporate attribute was statistically significant in association with the extent of mandatory disclosure.

CHAPTER XII

MULTIVARIATE STATISTICAL ANALYSIS: DISCLOSURE EXPLANATORY MODEL

> The difficulty is to detach the framework of fact - of absolute undeniable fact - from the establishments of theorists and reporters. Then, having established ourselves upon this sound basis, it is our duty to see what inferences may be drawn.
>
> (Silver Blaze, quoted in Casley and Lury, 1981, p. 72)

This chapter answers the fourth research question posed in this study. Specifically, it describes the development of a multivariate regression model that seeks to ascertain corporate attributes that explain, in a conjuctional manner, the extent by which the sample companies had complied with the mandatory disclosure requirements of the ZSE. It also estimates the parameters of the model, and evaluates the model's robustness.

Hanushek and Jackson (1977, p. 4) define a model as "a series of hypotheses about how an endogenous variable (Y) is related to (is a function of) one or more exogenous variables (X)." Basically, the model developed here is a cross-sectional, linear, multivariate regression. It specifies a linear functional relationship between mandatory disclosure and the identified corporate attributes. All the attributes were included in the model whether it correlates significantly with mandatory disclosure or not. The justification for this is three fold. First, the absence of linear correlation between two variables does not necessarily imply independence (Koutsoyiannis, 1977, pp. 43-44). Correlation analysis does not reveal collinear relationships involving more than two variables. Second, correlation analysis is concerned with the covariability of variables; none of which is dependent nor independent. In simple terms, correlation analysis does not establish nor prove any casual relationship between the variables involved. In the

context of this study, it does not suggest that variations in the extent of mandatory disclosure are caused by variations in, say, company size or vice versa. This is because correlation analysis is symmetrical: inter-changing the two variables involved in the formula does not change the results. Third, to employ the "general-to-simple" model-building approach of Hendry (1985) and the London School of Economics.[1] As the name suggests, the approach posits that a model should first be specified with many independent variables. The model should then be subject to a data-based simplification through a number of diagnostic tests with the view of improving it. The independent variables with least significant coefficients are then eliminated; resulting in a model with fewer parameters.

In short, the purpose of this multivariate regression analysis is to empirically assess the strength of partial correlation between each corporate attribute and mandatory disclosure. This objective motivates the following null hypothesis:

> Hypothesis 10: ***Ceteris paribus**, there is no difference in the relative significance of each of the eight identified corporate attributes in explaining the variations in the extent by which the listed companies on the ZSE have complied with its mandatory disclosure requirements.*

Specification of the Disclosure Explanatory Model

As indicated above, the model is a multivariate regression whose dependent variable (the extent of mandatory disclosure) is assumed to be influenced by some independent variables (the eight identified corporate attributes). It specifies the structural relationship between the extent of mandatory disclosure and the corporate attributes. A review of the econometrics literature urged me to make five assumptions in developing the

[1] The general-to-simple approach was advocated by Hendry (1985) and some econometricians at the London School of Economics (see, for example, Hendry and Richards [1982, 1983] and Gilbert [1986, 1989]). Although Hendry focussed primarily on time series modelling, the principle is equally applicable to cross-section data (see Ramanathan, 1995).

model. The first assumption is that the extent to which a listed company will comply with the mandatory disclosure rules of the ZSE is a function of the identified corporate attributes, an intercept (a constant term), and a disturbance term. Second, the relationship between the extent of mandatory disclosure, the corporate attributes, the intercept, and the disturbance term is linear. Third, the extent of mandatory disclosure, measured by the disclosure scores, of the sample companies is normally distributed for every combination of the values of each corporate attribute in the model. Fourth, none of the corporate attributes will perfectly linearly correlate with each other either taken separately or in combination. Finally, it is assumed that the corporate attributes are fixed and non-stochastic.

The use of the multivariate regression approach in addressing the fourth principal research question is justified in several respects. First, it allows me to investigate the collective influence of the corporate attributes on the extent of mandatory disclosure. While the third research question examines the linear correlation between the extent of mandatory disclosure and each identified corporate attribute, it does not take into account other attributes that influence mandatory disclosure. In practice, however, these attributes influence corporate mandatory disclosure simultaneously. Related to the above reason is the fact that mandatory disclosure is a complex, multifactorial phenomenon. Moreover, these attributes are often inter-related, and as such the use of a bivariate analysis is unsuitable (Adhikari and Tondkar, 1992). Consequently, a multivariate statistical technique capable of handling several attributes simultaneously would constitute an appropriate test of the functional relationship between mandatory disclosure and corporate-specific attributes likely to influence the former.

Second, it allows researchers to combine different variables which have been measured on different scales. For example, it has enabled me to combine those corporate attributes measured on interval scale in this study (for example, the type of industry and

liquidity variables) with those measured as continuous variables (for example, company size and profitability variables) in a regression equation.

Third, it offers the possibility of using dummy to capture the influences of certain variables such as MNC affiliation, and quality of external audit of this study which can only be expressed in discrete terms. Fourth, the use of multivariate regression analysis does not deny the existence of other factors that might influence mandatory disclosure. Rather, it merely estimates the proportion of mandatory disclosure that can be explained by the identified corporate attributes included in the model. Finally, it is a means of avoiding any spurious relationship that may subsists between each of the corporate attributes and mandatory disclosure. In other words, correlation analysis does not safeguard against an impact of a third (confounding) factor which may be producing the relationship between one corporate attribute and mandatory disclosure. Thus, for each sample company the following linear model is assumed to hold:

$$\begin{aligned} MDS_j = \alpha &+ \beta_1 Size_j + \beta_2 Audit_j + \beta_3 Hold_j + \beta_4 Indus_j \\ &+ \beta_5 Age_j + \beta_6 Multi_j + \beta_7 Profit_j + \beta_8 Liquid_j + U_j \end{aligned} \quad (12.1)$$

where,

MDS_j	=	the observed value of the dependent variable (the mandatory disclosure score) for the *j* sample company;
α	=	the intercept to be estimated from the data which is assumed constant across the sample companies;
βi	=	the coefficients of the independent variables to be estimated from the data, where $i = 1, \ldots, 8$;
$Size_j$	=	the company size variable for the *j* sample company;
$Audit_j$	=	the quality of external audit variable for the *j* sample company;
$Hold_j$	=	the share ownership structure variable for the *j* sample company;
$Indus_j$	=	the industry-type variable for the *j* sample company;
Age_j	=	the company age variable for the *j* sample company;
$Multi_j$	=	the MNC affiliation variable for the *j* sample company;
$Profit_j$	=	the profitability variable for the *j* sample company;
$Liquid_j$	=	the liquidity variable for the *j* sample company; and
U_j	=	the stochastic disturbance term for the *j* sample company.

An intercept was included in the model for two reasons. First, to capture the average effects of corporate attributes that are not included in the model. Second, to avoid any potential mis-specification of the disclosure explanatory model by forcing the regression curve through the origin. Ramanathan (1995, p. 189) recommends that an intercept should always be included in a model unless there is a strong theoretical reason to do otherwise.

Similarly, a stochastic disturbance term was introduced into the model to capture the effects of all other factors likely to influence mandatory disclosure, but can not be measured statistically. They include qualitative factors such as taxation, socio-cultural and political systems, and the degree of professionalism of the accountancy body in Zimbabwe which can not even be approximated satisfactorily with dummy. The disturbance term also takes into account the influence of errors made in measuring the corporate attributes which are inevitable due to how data on them were produced, collected, and processed. It also absorbs the effects of the erratic elements that are inherent in human behaviour. In the econometrics literature, the disturbance term is assumed to be random; has a zero mean; a constant variance; serially independent; and normally distributed.

Estimating the Parameters of the Model

This section describes how the numerical values of the parameters of the model were computed. Several techniques have been suggested in the econometrics literature with which to derive estimates of parameters of a model from observed data. However, the nature of the problem under investigation and that of the data, the model specified, and time and cost requirements of alternative estimation techniques normally dictate the procedure(s) to use (Hanushek and Jackson, 1977, Koutsoyiannis, 1977, pp. 20-21). The parameters of Equation 12.1 were estimated by employing ordinary least squares (OLS) technique. The OLS estimation technique was employed in this study for four reasons.

First, parameter estimates obtained by OLS technique have some optimal, theoretical, statistical attributes. For example, Koutsoyiannis (1977, pp. 100-116) has demonstrated that OLS estimates are best, linear, unbiased, and efficient. According to Koutsoyiannis, an unbiased estimator is one that converges to the true value of the parameter as the sample size increases. It is linear if it is determined by a linear combination of the sample data. An estimator is described as best if it has the smallest variance within the class of linear unbiased estimators, and as efficient if it possesses both the properties of unbiasedness and minimum variance.

Second, although the relationship between the extent of mandatory disclosure and the corporate attributes is assumed to be linear, the model itself is linear in the parameters (see Gujarati, 1995, p. 37 for details on this).

Third, the OLS is the most commonly and widely used estimation technique in the literature concerned with the relationship between disclosure indexes and corporate attributes. This is because its computational procedure is relatively fairly simple, and does not require excessive data (Koutsoyiannis, 1977). Finally, the OLS was used in this study because it is an essential component of most other econometric estimating techniques, except full information maximum likelihood method (Koutsoyiannis, 1977, p. 48).[2]

The OLS estimation technique generates estimates for the intercept and the regression coefficients by minimising the sum of the squared errors, where the error is measured by the difference between the observed and the predicted mandatory disclosure score (Koutsoyiannis, 1977; Pindyck and Rubinfeld, 1991). Since the true nature of the functional relationship between mandatory disclosure and the corporate attributes is not known six alternative specifications of the basic regression model (Equation 12.1) were

[2] These econometrics estimating methods include single-equation techniques: indirect least squares (or reduced-form technique), two-stage least squares (see Welker [1995] for its application in accounting), limited information maximum likelihood, mixed estimation methods, and simultaneous-equation techniques: three-stage least squares method (Koutsoyiannis, 1977, p. 20).

estimated which the OLS regressions serve as reference point. Table 12.1 presents the intercepts, the coefficients, and related statistics of each of the resulting models.

Model A

Model A is a simple regression model run with all the identified corporate attributes included. As was also indicated by the results of the correlation analysis performed earlier, mandatory disclosure is an increasing function of only one corporate attribute, namely company age. Thus, systematic variation in mandatory disclosure practices of companies listed on the ZSE is explained only by company age which is significant at the 5 per cent level. The *t* statistics of the remaining corporate attributes are insignificant, indicating that they have a negligible effect on mandatory disclosure practices of Zimbabwe listed public companies.

Model B

Model B was estimated using a stepwise regression procedure with critical *F* values of 0.05 for variable entry, and 0.10 for removal. The stepwise procedure examines the partial contribution of each of the corporate attributes in explaining the variability in the extent of mandatory disclosure on the pre-selected entry and removal *F* values (Norusis, 1994a). A corporate attribute enters the regression equation if it meets the entry criterion, and remains in the equation if it does not meet the removal requirement. The process continues until all the eight corporate attributes have been evaluated for entry and removal. The resulting equation, Model B, is the best fit regression curve with only the intercept and company age being significant at 1 per cent and 5 per cent levels respectively. The rest of the identified corporate attributes initially included in the model were all removed from the equation because they did not meet the specified criteria for retention.

Table 12.1

The effects of corporate attributes on mandatory disclosure
(*t* values in parentheses and *p* values of a two-tailed test in brackets)

Variable	Hypothesised effect on mandatory disclosure	Model					
		A	B	C	D	E	F
Intercept	?	60.755 (6.205) [0.000]	71.898 (51.049) [0.000]		4.672 (1.236) [0.224]	55.130 (6.784) [0.000]	54.227 (5.296) [0.000]
Company size	?	1.340 (0.792) [0.436]	X	11.511 (19.979) [0.000]	0.040 (0.875) [0.387]	3.404 (2.298) [0.028]	3.059 (1.720) [0.093]
Audit quality	?	-0.119 (-0.082) [0.935]	X	-0.935 (-0.470) [0.641]	0.163 (0.128) [0.899]	0.331 (0.287) [0.776]	0.096 (0.063) [0.950]
Ownership structure	?	0.073 (1.484) [0.146]	X	0.146 (2.219) [0.032]	0.081 (1.546) [0.130]	0.082 (2.143) [0.039]	0.093 (1.814) [0.077]
Industry-type	?	-0.567 (0.787) [0.436]	X	1.454 (1.488) [0.144]	-0.472 (-0.760) [0.451]	-1.416 (-2.352) [0.024]	-1.039 (-1.371) [0.178]
Company age	?	0.056 (2.281) [0.028]	0.495 (2.058) [0.045]	0.836 (2.518) [0.016]	0.133 (2.361) [0.023]	0.061 (3.016) [0.005]	0.057 (2.235) [0.031]
MNC affiliation	?	2.452 (1.541) [0.131]	X	1.976 (0.898) [0.374]	2.870 (1.983) [0.054]	3.569 (2.767) [0.009]	3.424 (2.047) [0.047]
Profitability	?	0.843 (0.825) [0.414]	X	0.308 (2.254) [0.030]	0.009 (0.196) [0.846]	0.067 (0.625) [0.536]	0.259 (2.412) [0.021]
Liquidity	?	1.311 (0.875) [0.387]	X	1.534 (0.740) [0.463]	1.250 (0.970) [0.338]	0.447 (0.362) [0.719]	0.633 (0.402) [0.690]
Adjusted R-squared		0.052	0.063	0.992	0.045	0.345	n/r
F statistic		1.326	4.234	757.300	1.284	3.830	2.420
Significance (5%) of *F* statistic		0.257	0.045	0.000	0.279	0.002	0.031
Sum squares of error		933.77	1,084.31	1,832.57	681.32	482.00	n/r
Number of observations		49.00	49.00	49.00	49.00	44.00	49.00
Degrees of freedom		48.00	48.00	49.00	48.00	43.00	n/r

? indicates that the nature of the effect of the corporate attribute on mandatory disclosure is not known.

X denotes corporate attributes removed from the model as they did not satisfy the stepwise regression criteria.

n/r indicates that the statistic is not reported by the estimation procedure.

While stepwise regression procedure is widely used in the literature, its limitations are rarely appreciated. McIntyre, Montgomery, Srivivasan and Weitz (1983) have demonstrated the biases of the usual statistics (that is, the *t* statistics of the individual independent variables, the adjusted R-squared, and the *F* statistic for the entire regression model) that results from stepwise procedure. They explained that the biases are due to the small number of independent variables (than their number in the pre-specified model) in a model resulting from the use of the stepwise procedure.

Model C

Model C presents the results of a regression without an intercept. In geometric terms, the linear regression curve of Model C passes through the origin as it assumes a zero intercept term. A greater proportion of the variability in the dependent variable (the mandatory disclosure) about the origin is explained by this model. Thus, about 99 per cent of the model is explained by only four of the eight identified corporate attributes, namely company size, ownership structure, company age, and profitability. While the associated *t* statistic of the coefficient of company size is very significant (at the 1 per cent level), those of the three other corporate attributes are significant at the 5 per cent level. The estimated numeric values of the coefficients of all the corporate attributes included in the model changed drastically, but there were no changes in their signs (except the industry-type variable).[3] While the relative impacts of audit quality, MNC affiliation, and profitability worsened, those of company size, company age, and liquidity improved. Although the adjusted R-squared of this model is relatively high, it should not be compared to adjusted R-squared for models which include intercepts. Also, because the intercepts of the other models are significant at the 1 per cent level (except Model D), Model C may be mis-specifying the functional relationship between mandatory disclosure and the identified

[3] The comparison is made with Model A of Table 12.1.

corporate attributes. As stated earlier, Ramanathan (1995) has cautioned against specification of models with no intercepts that can not be justified theoretically. In the context of this study, Model C, though has the highest explanatory power (99 per cent), can not be the "best" fit of the empirical data because a listed company can not completely disregard disclosure requirements of the stock exchange on which it is listed so that its regression curve will pass through the origin. At least, it will comply with basic disclosure requirements of the stock exchange which will be captured by an intercept of a model.

Because the sample size of this study is small (n = 49) and the possibility that some observations (the sampled companies) may have greater influence on the regression coefficients than others, a Cook's distance test was performed. Cook's distance test measures how much the regression coefficients are changed by deleting an observation. It measures the joint (combined) influence of the observation being an outlier on the dependent variable and on the set of the independent variable. Bollen and Jackman (1990) suggest that Cook's *D* statistic greater than $4/n$, where n is the sample size, should be of concern. Table 12.2 identifies the sample companies whose estimated Cook's *D* statistic is greater than the recommended threshold of $4/n$ (that is, 4/49 = 0.082).

Table 12.2

Outliers and influential observation points in data set

Research code	Name of observation/case	Cook's *D* statistic
B005	Bindura Nickel	0.159
C008	Capri Group	0.895
H025	Hippo Valley	0.107
Z048	Zimplow	0.134
Z049	ZSR Corporation	0.100

Two ways have been suggested in the econometrics literature (see, for example, Bollen and Jackman, 1990; Kassab, 1990, p. 361) to mitigate the effects of influential

points on regression statistics. The first is to estimate a rank regression which assigns "equal weight to all points" in a data set whether it is influential or not (Iman and Conover, 1979, p. 502). The second is to remove the influential cases from the data set. As part of the triangulation methodology being employed in this study both of the procedures were used here. The first procedure was used to estimate Model D, while the second was used for Model E. These models are now discussed.

Model D

Model D is a rank regression which treats all cases equally in the data set whether it is influential or not. Rank regression also eliminates methodological problems associated with skewed distributions, and negative values (Kane and Meade, 1997). Rank regression has been estimated in several prior studies (see Lang and Lundholm, 1993; Wallace, Naser and Mora, 1994; and Wallace and Naser, 1995). Model D was estimated with rank transformation of the mandatory disclosure scores (the dependent variable) of the sample companies and four corporate attributes (independent variable) measured on ordinal scale. The corporate attributes involved are company size, ownership structure, company age, and profitability. The raw (untransformed) data on the empirical indicants of these corporate attributes and the mandatory disclosure scores were assigned ranks; ordered from smallest to largest. The regression was run with these ranks[4] and those corporate attributes which are measured on interval scale. While the F statistic of Model D which tests the hypothesis that none of the corporate attributes helps to explain the variation in mandatory disclosure indexes is not significant at the 5 per cent level (that is, p value = 0.279), an examination of the regression statistics for the individual corporate attributes suggests otherwise. For instance, company age emerges again as the most

[4] Unlike Lang and Lundholm (1993) and Wallace and Naser (1995), the ranks in this study were not converted to percentiles. Because a regression run by the present investigator with ranks and another with ranks converted to percentiles (not reported here) yielded similar results.

significant predictor of mandatory disclosure practices of ZSE listed companies at the 5 per cent level. The MNC affiliation variable, for the first, is also significant at the 10 per cent level. The consequence of the MNC affiliation variable becoming a significant predictor of mandatory disclosure is the intercept losing its significance. The intercept also experienced a drastic change in the numerical value of its coefficient (now having only a moderate effect), though, it is still positive.

While rank regression is considered robust in mitigating many of the methodological problems mentioned above, Wallace, Naser and Mora (1994, p. 47, footnote 7) pointed out, however, that rank transformation compromises the significance of the resulting model. Indeed, this is evident in Table 12.1. The explanatory power of Model D is relatively smaller than the other models. Wainer and Thissen (1976) have also questioned the robustness of rank regression. They object to its use in behavioural sciences on the basis that rank procedures use only variables measured on ordinal scale.

Three plausible reasons may account for the poor explanatory power of Models A, B, and D. The first is the mis-specification of the models. Indeed, Ramsey's regression specification error test (RESET) performed on Model D (also similar to Models A and B) suggests that this is a possibility. The null hypothesis that Model D has no specification error was rejected at the 5 per cent level (F = 0.51, p value = 0.6768). While the results of Ramsey's RESET are convincing, Ramanathan (1995, pp. 290-291) has, however, pointed out two major limitations of that procedure which may cast doubt on this revelation. First, the RESET method is unable to specify the nature of the mis-specification. Second, it is unable to suggest an appropriate functional form by which the relationship should be modelled.

The second reason for the poor explanatory power of Models A, B, and D is that the assumed linear relationship between mandatory disclosure and the identified corporate attributes is suspect. Thus, Models A, B, and D may have wrong functional forms.

According to Pindyck and Rubinfeld (1991, p. 165), specification error can occur when a non-linear regression model is estimated as if it is a linear model. Ramanathan (1995, p. 253) has stressed that the linear relationship usually assumed to subsist between dependent and independent variables in regression models is "a severe and often unrealistic constraint on a model." Indeed, scatter plots of the relationships between mandatory disclosure and each of the four corporate attributes measured on ordinal scale suggest that their relationships were non-linear[5] (see Appendix D). Apart from the lack of empirical evidence for this assumed linear relationship, there were no theoretical reasons to assume the relationship between mandatory disclosure and the corporate attributes to be linear.

Finally, Ramanathan (1995, p. 199) has pointed out that unlike time-series models, cross-section models generally tend to have poor fits. He justified this by explaining that time-series data grow over time, and as consequence, models based on them tend to yield relatively good fits.

Model E

As noted above, another means of overcoming the effect of influential cases is to remove those cases from the data set. Model E was estimated after those influential cases (see Table 12.2) have been removed from the data set. The results of this model suggest that five of the corporate attributes in the model have a statistically significant effect on the extent of mandatory disclosure. While company age and MNC affiliation have a positive significant effect on mandatory disclosure at the 1 per cent level, company size and ownership structure of issued equity shares have a positive significant effect at the 5 per cent level. Also, the industry-type variable, for the first time, became significant at 5 per cent level but still have a negative effect on the extent of mandatory

[5] Wallace (1987) has long called for specification of such models in this area of research. Cooke (1989c) also made a similar call.

disclosure. Further, like the other models (except Model C which has no intercept), the intercept of Model E is also positively significant at the 1 per cent level.

In spite of the relatively good performance of Model E, the data-removal procedure has fiercely been criticised in the econometrics literature (see, for example, Dietz, Frey and Kalof, 1987, p. 383; Bollen and Jackman, 1990; Kassab, 1990, p. 361). For instance, Bollen and Jackman (1990, p. 281) argued that the procedure of removing data to resolve problems of outliers is misleading and a severe remedy because an observation that is an outlier in one setting may not be an outlier in another. Kassab (1990, p. 361) also added that deleting outliers identified by univariate diagnostic tests such as stem-and-leaf plot is not effective as they do not detect multivariate outliers (that is, those observations appearing as outliers when two or more variables are viewed in combination). Another problem of the data-removal procedure is that it reduces sample size which may not be advisable if the sample size is small, as in this study.

Quite apart from the above, identifying the outliers is not enough. The presence of outliers in a distribution merely suggests that the sample is not from a normal distribution; it does not tell us whether the distribution is skewed or long-tailed symmetric. In view of this problem and the fact that those theoretical advantages of the OLS estimates enumerated earlier can not be claimed for the estimates of Models A to E as the data under investigation is outlier-prone, I employed an estimator which is more "robust" than the OLS to departures from normality. A statistical analysis is robust if it "does not depend too critically on specific distributional assumptions" (Sprent, 1989, p. 198). The estimation procedure of this robust model is now discussed.

Model F

Model F is a robust regression. Estimates of robust regression are substantially better than those of OLS in non-ideal (for example, if residuals are not normally,

distributed) situations (Kassab, 1990; Hamilton, 1991, 1992). Several robust estimators that have been suggested in the econometrics literature include least absolute deviations (LAD), bounded influence estimator (or GM-estimator), Huber estimator, least median of squares (LMS) and biweight least squares (BLS).[6] Both the Huber and the BLS robust estimators were used as the Stata statistical software employed in analysing the data of this study is designed to use Huber estimator first and then followed by the BLS. The rationale is that the initial Huber estimator improves the behaviour of the BLS estimates (Stata Corporation, 1997). Huber estimator is limited in dealing with effects of severe outliers which BLS is able to resist fairly, but sometimes fail to converge to zero or have multiple solutions (Li, 1985, p. 295; Dietz, Frey and Kalof, 1987; Dietz, Kalof and Frey, 1991; Stata Corporation, 1997).

The Huber and the BLS estimators are iterative techniques which assign weights to observations. The weights are based on absolute residuals associated with each observation on a previous iteration (Stata Corporation, 1997). The Huber estimator assigns observations with small residuals with weights of one, and those with larger residuals receive smaller weights. In the case of BLS, however, observations with non-zero residuals are down-weighted, but those with larger residuals are assigned zero weights and thus effectively dropped. The regression is run iteratively until the maximum changes in weights converge to zero (Li, 1985, p. 295). The results of this model, also reported in Table 12.1, suggest that company size, ownership structure, company age, profitability, and the intercept have a statistically significant effect on mandatory disclosure, but at different levels. Thus, while the intercept is very significant at the 1 per cent level, company age, profitability and MNC affiliation are significant at the 5 per cent; and company size and ownership structure are significant at 10 per cent level.

[6] For detailed description of each of the procedures, see Dietz, Kalof and Frey, 1991 pp. 464-466 and 474.

Sampling properties of robust estimators are not known in small samples (Dietz, Frey and Kalof, 1987; Dietz, Kalof and Frey, 1991). As a consequence, a non-parametric procedure of Bootstrap is generally used to assess sampling variability of robust estimators (Dietz, Frey and Kalof, 1987; Dietz, Kalof and Frey, 1991; Stata Corporation, 1997). Because the sample size of this study is small, the bootstrap procedure was used to re-estimate the standard errors of the coefficients of Model F. Bootstrapping provides a means of estimating standard errors and obtaining confidence intervals for true parameter values when distributional assumptions of the population are untenable. Mechanically, the bootstrap procedure works as follows: For a sample of n size, a bootstrap sample of n size is randomly drawn from the original sample with replacement. The regression coefficients are estimated using this bootstrap sample. A second bootstrap sample of n size is then drawn from the original sample, and the process is repeated (called a replication) until enough bootstrap samples have been drawn to provide estimates of the standard error of the parameters of interest. Some observations may not be selected at all in the process, while others may appear more than once (Efron, 1982; Rasmussen, 1987).

Complementing the robust regression with the bootstrap procedure provides efficient and unbiased parameter estimates and unbiased estimates of standard errors (Dietz, Frey and Kalof, 1987). Thus, robust and bootstrap estimation procedures, when use together, resolve the problem of non-normal residuals. The regression estimates of Model F reported in Table 12.3 are based on 100 bootstrap replications. The choice of the 100 bootstrap replications was influenced by the suggestion of Mooney and Duval (1993, p. 11) that 50 to 200 replications are generally adequate for estimates of standard error and thus adequate for normal approximation confidence interval, which are based on the standard error estimates. The bias in sample estimates of the regression coefficients because of the outliers are also reported in Table 12.3. Efron (1982, p. 8) suggests that the

estimated bias should not be of concern if it is less than 25 per cent of the associated standard error. He suggests further that the bias-corrected confidence interval should be reported instead, if the estimated bias is more the 25 per cent threshold. All the estimated bias shown in Table 12.3 except those for MNC affiliation and profitability are below 25 per cent of the associated standard errors. Hence, the reported confidence intervals for these two corporate attributes are bias-corrected. The confidence intervals for the other six corporate attributes are based on the assumption of approximate normality of the sampling (and hence bootstrap) distribution.

Table 12.3

Bootstrapped estimates of Model F

Corporate attribute	Observed BLS coefficient	Standard error	Bias	Percentage bias of standard error	Confidence interval (5% level)
Company size	3.059	3.206	-0.337	10.51	-3.303 – 9.421
Audit quality	0.096	2.017	0.067	3.32	-3.907 – 4.098
Ownership structure	0.093	0.061	-0.002	3.28	-0.028 – 0.214
Industry-type	-1.039	1.325	0.003	0.23	-3.670 – 1.591
Company age	0.057	0.034	-0.005	14.71	-0.009 – 0.124
MNC affiliation	3.424	2.662	-0.716	26.90	-2.617 – 8.603†
Profitability	0.259	0.255	-0.146	57.25	-0.282 – 0.492†
Liquidity	0.633	2.257	0.133	5.89	-3.846 – 5.112

† This is the bias-corrected confidence interval as the estimated bias is more than 25 per cent of the standard error (Efron, 1982).

The bootstrap procedure offers two advantages over parametric technique in estimating regression coefficients. First, it does not depend on the distributional assumptions required by parametric tests. Second, the bootstrap procedure retains distributional information about the original sample (Rasmussen, 1987). Unlike other non-parametric techniques which convert raw data to ranks (see, for example, Conover

and Iman, 1981), the bootstrap procedure does not throw away the distributional information about the original sample from which the bootstrap sample was drawn. In spite of these advantages, the usefulness of the bootstrap procedure is limited by four factors. First, its assumption that "the empirically generated sampling distribution of the bootstrap provides an accurate estimate of the sampling distribution of the statistic" has not been made clear by its advocates (Rasmussen, 1987, p. 137). Second, the bootstrap procedure yields excessively liberal Type I error rates and excessively restricted confidence intervals. Rasmussen (1987) compared the bootstrap and parametric approaches to estimating confidence intervals and Type I error rates of correlation coefficients of several samples ranging from 5 to 60. He found that the bootstrap procedure results in overly liberal Type I error rates and overly confidence intervals than the parametric technique. Rasmussen observed further that the bootstrap procedure performs poorly on both normally-and non normally-distributed data. Third, it is more appropriate for large sample size due to its asymptotic attribute (see Bickel and Freedman, 1981 for further discussion). Finally, it requires a highly powered computer to carry out the large number of computation involved in it. Thus, the run time on a microcomputer or the cost of central processing unit time on a mainframe computer can be excessive.

The fitted equation is thus:

$$\begin{aligned} \hat{MDS}_j = {} & 54.227 + 3.059\,Size_j + 0.096\,Audit_j + 0.093\,Hold_j - 1.039\,Indus_j \\ & + 0.057\,Age_j + 3.424\,Multi_j + 0.259\,Profit_j + 0.633\,Liquid_j + \varepsilon_j \end{aligned} \tag{12.2}$$

where,

$\hat{MDS}_j$ = the estimate of the true mandatory disclosure score that the j sampled company will earn under the 1994 mandatory disclosure regulatory regime of the ZSE.

ε_j = the estimate of the disturbance term, that is the difference between the observed and the predicted mandatory disclosure score based on the model for the j sampled company.

Assessing the Robustness of Model F

There are several ways to assess robustness of estimates of a model. This section describes and reports the results of the diagnostic methods employed to test the goodness of the estimates of Model F. Following Koutsoyiannis (1977), the model was evaluated on three criteria, namely an economic *a priori* criterion, statistical criterion, and econometric criterion. Each of these criteria is discussed as follows.

Economic "a priori" Criterion

This criterion assesses the model's robustness on the principles of economic theory, and the *prior* assumptions underlying the hypothesised relationships between mandatory disclosure and company size, ownership structure, company age, MNC affiliation, and profitability. It refers to the signs and the magnitudes of the significance of these corporate attributes in the estimated model (that is, the sizes of their regression coefficients, t statistics, and the associated p values).

The result of the positive effect of company size on mandatory disclosure, though significant at the 10 per cent level, suggests that large companies are better in disclosing mandated information as their competitive advantage will not be weakened by such disclosure as it might be for small companies. Another explanation could be that because large companies in Zimbabwe are mostly affiliated with MNCs; they tend to have access to modern technology with the consequence that producing information by these companies becomes less tedious and relatively cheaper. Hence, the tendency for such companies to disclose more information in their annual reports and accounts is more likely in Zimbabwe. The positive relationship between company size and mandatory disclosure is consistent with the results of similar studies conducted on some emerging economies such as in Hong Kong (Tai et al., 1990); and in Bangladesh (Ahmed and Nicholls, 1994).

The finding that ownership structure is positively related to mandatory disclosure is inconsistent with agency theory. In the context of disclosure studies, this theory suggests that companies whose equity shares are predominately held by insiders tend to disclose less information in their annual report and accounts. As pointed out earlier, this positive relationship between ownership structure and mandatory disclosure questions the general assumption that countries where either the state (for example, China), banks (for example, Germany and Japan) or certain families (for example, Hong Kong) hold greater proportion of corporate voting shares there is a tendency for companies to disclose less information in their annual reports and accounts. Perhaps, the implications of the agency theory for disclosure relate more to voluntary disclosure than to mandatory disclosure.

Although the impact of company age on mandatory disclosure is not strong, it is significant at the 5 per cent level. The positive impact of company age on mandatory disclosure can be explained in terms of the principles of learning curve. It takes newly-listed companies longer time to become used to the demands of being public companies including their external financial reporting and accounting responsibilities. In other words, a company's disclosure score increases over time as it becomes used to being a public listed company. The superiority of the older listed companies on the ZSE in disclosure practices can also be attributed to their long association with corporate managers of some UK companies. Indeed, most of these older companies in Zimbabwe were once managed by UK expatriates in that country before the country's independence in 1980.

The positive effect of MNC affiliation on mandatory disclosure can be attributed to the insistence of head offices of MNCs for high quality information from their local affiliates in Zimbabwe. Apart from the use of this information for internal purposes, the headquarters of MNCs use such information to strengthen their bargaining power in negotiations with trade unions and host governments. Of particular relevance here is the fact that the President of the Republic of Zimbabwe is well noted for his position on the

ill-effects of imperialism and activities of MNCs on developing countries' economies and other issues in international politics. In view of this, MNCs with affiliates in Zimbabwe insist on full compliance with that country's statutory and regulatory requirements as a means of avoiding or reducing political costs.

Similarly, the positive effect of profitability on mandatory disclosure is consistent with signalling theory which, when applied in the present context, suggests that managers of profitable companies are more likely to disclose more information in their annual reports and accounts to justify their salaries (Singhvi and Desai, 1971), and to signal their superior performance to the market (Wallace, Naser and Mora, 1994). The significant positive relationship between profitability and mandatory disclosure is consistent with the results reported in Wallace, Naser and Mora (1994).

Statistical Criterion

This criterion relies on statistical theory to evaluate the reliability of the estimates of the parameters of a model. According to Koutsoyiannis (1977), the most commonly used statistical criteria are the multiple correlation coefficient (the adjusted R-squared in linear models), and the standard deviation (or standard error) of the estimates. As stated earlier, the explanatory power of Model F is not reported by the estimation procedure used. However, the explanatory powers of the other estimated models in Table 12.1 suggest that additional independent variables may need to be identified. A particular variable that could possibly be included in the model is the ethnicity of corporate managers of the sampled companies. This is because Zimbabwe consists of three main ethnic groups, namely the native blacks, the immigrant Europeans and Asians, but this variable was not considered in this study due to the difficulty of compiling data on it. The support for investigating the effect of ethnicity of corporate managers on mandatory disclosure is provided by Singhvi (1968) and Wallace and Naser (1995). For instance,

Wallace and Naser (1995) found significant differences in disclosure comprehensiveness between Chinese and non-Chinese managed companies in Hong Kong.

Econometric Criterion

This criterion employs the theory of econometrics and seeks to ascertain whether or not the assumptions of the estimation technique employed are satisfied by the estimated model. More specifically, it tests the validity of the assumptions of the error term. If they are invalid, the estimated model may be unreliable. Some of these assumptions are assessed in connection with Model F as follows.

The assumption of collinearity

The econometrics literature takes the theoretical position that the independent variables are not collinear in the population. The violation of this assumption makes it difficult to isolate the impact of each of the collinear variables on the dependent variable. The assumption of no collinearity among the independent variables (the empirical indicants of the corporate attributes) was first examined on the data to get a heuristic feel for its presence before any formal estimation was carried out. The econometrics literature provides numerous suggestive approaches for detecting the presence and magnitude of collinearity. A detailed review of these approaches here is beyond the purpose and scope of this study. Several of the most commonly used procedures include the examination of correlation matrix of the independent variables, tolerance of the independent variables, variance inflation factor, eigenvalues, and condition numbers (Norusis, 1990; Mason and Perreault, 1991; Gujarati, 1995). Of these, only three of the procedures for detecting collinearity were employed in this study. The first is the correlation matrix of the empirical indicants of the corporate attributes. This collinearity detection procedure is preferred as it is commonly used in most empirical studies. Table 12.4 reports the results of a Pearson product-moment correlation test performed on each pair of the indicants of

the corporate attributes. Except the correlation coefficient of company size (that is, log market values of equity and log total assets), no other corporate attribute possess a correlation coefficient greater than the threshold level of 0.80.[7] Collinearity becomes a serious problem if the correlation coefficient of two variables is greater than 0.80 (Gujarati, 1995, p. 335). This implies that both log market values of equity shares and log total assets should not be included in the model as they capture the same phenomenon.

Table 12.4

Pearson product-moment correlation matrix of the indicants of corporate attributes (Two-tailed significance at 5% level in parentheses)

Variable	Acid test	Age	Audit	Industry	Insider holding
Acid test	1.0000 n/c	-0.0539 (0.713)	-0.0069 (0.963)	-0.2672 (0.063)	-0.0359 (0.807)
Age	-0.0539 (0.713)	1.0000 n/c	0.0606 (0.679)	0.0219 (0.881)	-0.0762 (0.713)
Audit	-0.0069 (0.963)	0.0606 (0.679)	1.0000 n/c	-0.1243 (0.395)	-0.1005 (0.492)
Industry	-0.2672 (0.063)	0.0219 (0.881)	-0.1243 (0.395)	1.0000 n/c	0.0908 (0.535)
Insider holding	-0.0359 (0.807)	-0.0762 (0.603)	-0.1005 (0.492)	0.0908 (0.535)	1.0000 n/c
Log market values	-0.0222 (0.880)	-0.0728 (0.619)	0.0695 (0.635)	-0.0397 (0.786)	-0.1519 (0.298)
Log total assets	-0.0534 (0.716)	-0.0434 (0.767)	0.1796 (0.217)	0.0248 (0.866)	-0.1229 (0.400)
Return on turnover	0.0498 (0.734)	-0.1164 (0.426)	-0.0264 (0.857)	-0.2703 (0.060)	-0.1136 (0.437)
Return on capital employed	0.1100 (0.452)	0.0383 (0.794)	-0.0808 (0.581)	0.0379 (0.796)	-0.2193 (0.130)
MNC affiliation	-0.0742 (0.612)	-0.0359 (0.806)	-0.0851 (0.561)	-0.1390 (0.341)	-0.2352 (0.104)

n/c indicates that the significant level of a coefficient can not be computed.

[7] The correlation between log market value of equity and return on capital employed is also significant at the 5 per cent level.

Table 12.4 (Continued)

Pearson product-moment correlation matrix of the indicants of corporate attributes (Two-tailed significance at 5% level in parentheses)

Variable	Log market value	Log total assets	Return on turnover	Return on capital employed	MNC affiliation
Acid test	-0.0222 (0.880)	-0.0534 (0.716)	0.0498 (0.734)	0.1100 (0.452)	-0.0742 (0.612)
Age	-0.0728 (0.619)	-0.0434 (0.767)	-0.1164 (0.426)	0.0383 (0.794)	-0.0359 (0.806)
Audit	0.0695 (0.635)	0.1796 (0.217)	-0.0264 0.857	-0.0808 (0.581)	-0.0851 (0.561)
Industry	-0.0397 (0.786)	0.0248 (0.866)	-0.2703 (0.060)	0.0379 (0.796)	-0.1390 (0.341)
Insider holding	-0.1519 (0.298)	-0.1229 (0.400)	-0.1136 (0.437)	-0.2193 (0.130)	-0.2352 (0.104)
Log market values	1.0000 n/c	0.8889 (0.000)	0.1267 (0.385)	-0.3183 (0.026)	0.1373 (0.347)
Log total assets	0.8889 (0.000)	1.0000 n/c	0.1686 (0.247)	-0.2511 (0.082)	0.0949 (0.517)
Return on turnover	0.1267 (0.385)	0.1686 (0.247)	1.0000 n/c	0.4271 (0.002)	-0.0627 (0.669)
Return on capital employed	-0.3183 (0.026)	-0.2511 (0.082)	0.4271 (0.002)	1.0000 n/c	0.0779 (0.595)
MNC affiliation	0.1373 (0.347)	0.0949 (0.517)	-0.0627 (0.669)	0.0779 (0.595)	1.0000 n/c

n/c indicates that the significant level of a coefficient can not be computed.

Also, the two indicants of profitability were not included in the model simultaneously as their correlation coefficients were significant, though they were below the threshold level of 0.80. The inclusion of these indicants for both company size and profitability could lead to model mis-specification (Koutsoyiannis, 1977). The qualitative interpretation of any of the models, the sign of coefficient of company size and the associated observed significant level are the same no matter how company size is measured. That is, whether company size is measured by log total assets or log market values does not change the qualitative interpretation of the resulting model. Model E is an exception in this respect. The company size variable in Model E becomes insignificant

whenever it is measured with log market values. Company size was, however, measured by log total assets in all the regression models in Table 12.1.

Similarly, in several trial regression models, the results of which are not reported here, the inclusion of the two empirical indicants of the profitability variable renders the signs of their coefficients negative. However, the sign of the coefficient of each measure of profitability is positive when included individually in any model. The profitability variable is significant whenever it is measured by return on capital employed in Models C and F. In view of these findings, the profitability variable was measured by return on capital employed in all the regression models reported in Table 12.1.

Although the correlation matrix procedure is commonly used in empirical studies, it has a serious drawback. That is, the correlation matrix procedure is incapable of detecting linear relationships among more than two independent variables. Because of this problem, two other related procedures for detecting collinearity were also employed. These are: (1) tolerance, and (2) variance inflation factor (VIF) procedures.

The tolerance procedure involves an examination of the computed measures of tolerance of each independent variable. A tolerance of an independent variable is "the proportion of variability of that variable that is not explained by its linear relationships with the other independent variables in the model" (Norusis, 1994b, p. 484). In other words, it is defined as 1- R_k^2, where R_k^2 is the coefficient of determination when the *k*th independent variable is regressed on other independent variables in the model. According to Gujarati (1995, p. 339), collinearity is a problem if the measure of tolerance of a variable is zero.

The VIF is a reciprocal of tolerance. Thus, the VIF of the *k*th independent variable is algebraically defined by Norusis (1990, p. 355) as:

$$VIF_k = \frac{1}{\left(1 - R_k^2\right)} \tag{12.3}$$

The general rule suggests that collinearity is a problem if the VIF of an independent variable exceeds 10 (Kleinbaum, Kupper and Muller, 1987, p. 210; Gujarati, 1995, p. 339). Table 12.5 reports the measures of tolerance and VIF for the empirical indicants of the independent variables (the corporate attributes).

Table 12.5

Measures of collinearity: Tolerance and variance inflation factor

Variable	Tolerance	Variance inflation factor
Log market values	0.1787	5.59
Log total assets	0.1819	5.50
Audit	0.8587	1.16
Industry	0.7156	1.40
Insider holding	0.8351	1.20
Age	0.9541	1.05
MNC affiliation	0.8262	1.21
Return on turnover	0.5812	1.72
Return on capital employed	0.5527	1.81
Acid test	0.8738	1.14

As evident from Table 12.5, collinearity is not a problem. However, as explained earlier, the two empirical indicants for company size (total assets and market values of equity shares) as well as those for profitability (return on turnover and return on capital employed) were not included in the models simultaneously.

The assumption of mean of zero

This assumption of the disturbance term is the most difficult to verify. Consequently, it is often taken for granted in the literature, and it is also so in this study.

The assumption of normal distribution

This assumption of normal distribution of regression residuals makes it possible to evaluate the statistical significance of the relationships between mandatory disclosure and the corporate attributes as reflected by Model F.

For a sample size greater than 30, this regression assumption is fulfilled if the distribution of studentised residuals is normal (Norusis, 1994b). A visual inspection of the Normal probability plot (Q-Q plot) of studentised residuals of Model F in Figure 12.1 suggests that its error term is fairly normally distributed as the data points cluster around the straight line.

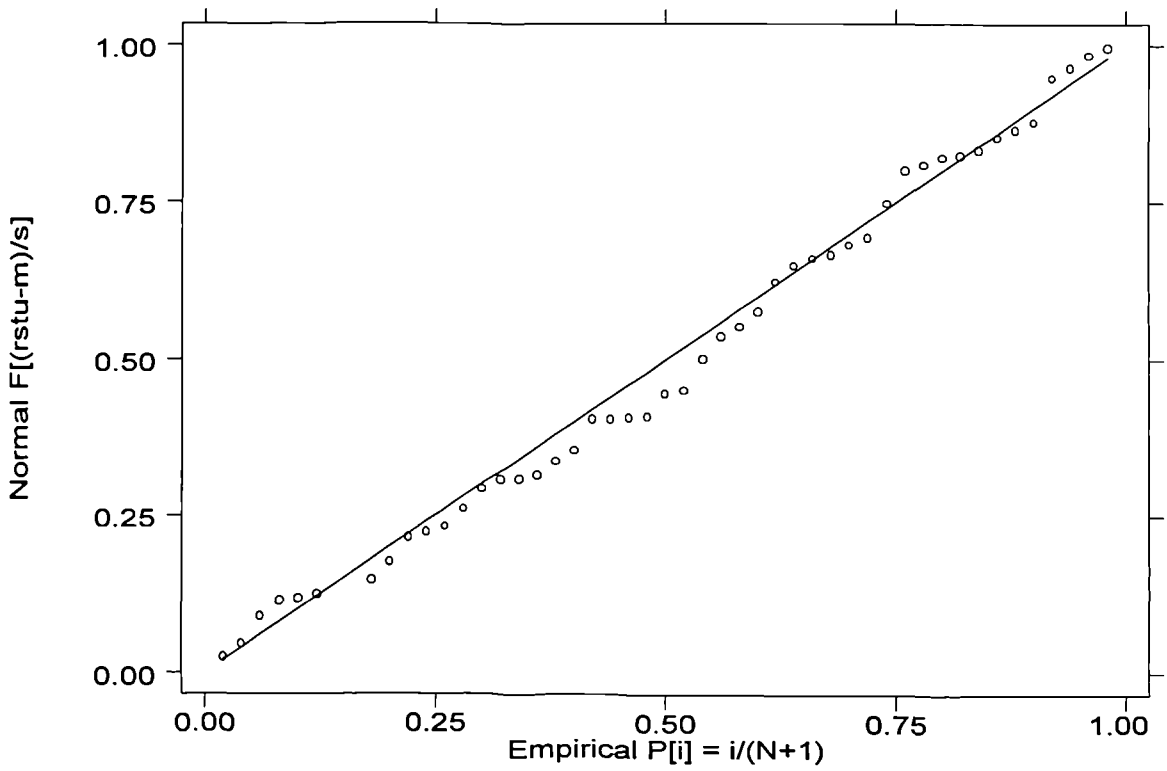


Figure 12.1 Normal probability plot of regression studentised residuals

Summary

In this chapter, alternative specifications of the basic multiple linear regression equation of the relationship between mandatory disclosure and a set of eight corporate attributes were modelled, estimated, and compared. Overall, Hypothesis 10 was not

supported. Thus, the impact of each of the corporate attributes on mandatory disclosure was relatively different from one another. While company age, profitability, and MNC affiliation were positively significant at the 5 per cent level, company size and ownership structure were also positively significant but at the level of 10 per cent. On the extreme, whereas the intercept is significant at 1 per cent level, audit quality, industry-type and liquidity were not significant at the conventional levels. In sum, the mandatory disclosure behaviour of the sampled ZSE listed companies is explained by the intercept, company age, MNC affiliation, profitability, company size, and ownership structure.

CHAPTER XIII

CONCLUSIONS, LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

This chapter contains the summary of the major findings of this study, and their possible policy implications. Further, it compares and contrasts the results of the present study with those of some prior studies on emerging economies. It also discusses the limitations of the research methodology and statistical techniques employed on the data in an attempt to answer the four principal research questions raised in Chapter I. In addition, it identifies some areas of further research.

Conclusions and Policy Implications

The main thrust of this study has been to empirically investigate the adequacy of the mandatory disclosure practices of public companies listed on the ZSE, and to assess the stringency of the disclosure regulatory regime of the stock exchange. The statistical results reported in Chapters XI and XII have led to three conclusions. Arising from these conclusions and discussed below are important policy implications for the regulation of corporate securities and financial disclosure and reporting in Zimbabwe.

The first conclusion is that mandatory disclosure practices of the sample companies listed on the ZSE, on the whole, appear adequate as applicable information items disclosed in their annual reports and accounts ranged from 63 to 85 per cent of those required of them. These percentages are similar to those reported in some prior studies on emerging economies such as India (Marston, 1986), and Nigeria (Wallace, 1987).

However, a disaggregation of the mandatory disclosure scores of the companies in the sample, on the basis of the source of the requirement, however, suggests that the amount of mandated information disclosed in the annual reports and accounts of the sample companies is, in part, inadequate. There were several instances where some sample companies did not provide some of the information items required of them under the disclosure regulatory regime. Such finding should point policy-makers to information items on which listed companies could be asked to provide more adequate information to meet the needs of users of corporate annual reports in Zimbabwe.

Second, on the basis of the statistical results of Hypothesis 1 for the second research question, it can be concluded that the disclosure regulatory regime of the ZSE is not stringent. There are considerable divergence between what listed companies on this stock exchange practised and what were required of them under the 1994 disclosure regulatory regime.

Although the results reported in this thesis for research question 1 and Hypothesis 1 are based on the analysis of 49 public companies listed on the ZSE, the results can be generalised to all other ZSE listed companies, and perhaps, other public companies in Zimbabwe. Because the listed companies are the most profitable and efficiently run public companies in Zimbabwe, it can, therefore, be argued that the public companies whose securities are not listed on the Official List of the ZSE are less likely to provide more than adequate mandated information in their annual reports and accounts. This is justified by the fact that if public listed companies that are subject to a relatively more stringent disclosure regulatory regime are not complying with the disclosure and reporting requirements, it is more likely that non-listed public companies will be disregarding the statutory and regulatory rules. If the necessary information required to make informed investment decisions about listed securities is lacking;

manipulation and speculation, then, become more prevalent on the market resulting in loss of confidence in the securities market.

There is, therefore, the need to introduce stricter disclosure regulatory enforcement and monitoring mechanisms in Zimbabwe to ensure adequate provision of information in annual reports and accounts, especially, those of listed companies. The present monitoring procedure of the ICAZ's APC is not satisfactory , because only 25 annual reports and accounts of randomly selected state-owned enterprises and public companies are reviewed each year. Most of the listed companies, a subset of the public company's category, can easily escape the net for several years before their non-compliance with the mandatory disclosure requirements of the stock exchange is discovered. A monitoring system whereby annual reports and accounts of every listed company will be subject to the review process, at least, once every three years should be designed and established. The implementation of this proposal will not put much strain on the resources of the stock exchange as the number of companies listed on the market is relatively small. Thus, if annual reports and accounts of, say, 22 companies are selected (not randomly) every year, all the listed companies would have had their annual accounts scrutinised by the disclosure regulatory monitoring team by the end of the third year.

The third conclusion relates to the statistical results of the multivariate robust regression analysis (for Hypothesis 10). The results of Hypothesis 10 indicate that company size; ownership structure; company age (stage of development and growth); MNC affiliation; and profitability are significantly associated with the degree of mandatory disclosure practices of the sampled companies. Of these predictor variables, company age is a very critical explanatory variable as it was significant in all the six regression models specified and estimated in Chapter XII.

Although the relationship between some of these corporate attributes and the extent of mandatory disclosure is not very strong, any educational policy to raise the awareness of listed companies' financial disclosure and reporting responsibilities to external users of their annual reports and accounts should be directed at those companies that are smaller in size; newly-listed on the ZSE, have a higher percentage of their issued and outstanding ordinary shares widely-held; have no affiliation with MNCs and are unprofitable.

Another policy implication of the results of Hypothesis 10 is that just as the relationship between adequate disclosure and certain corporate attributes reported in the literature about some developed securities markets was found in Zimbabwe, it would be expected that financial disclosure and reporting models that apply to these developed securities markets may also apply to Zimbabwe, and perhaps, other emerging capital markets.

The results of this study can be compared on several fronts with those of some prior studies undertaken by Wallace (1988) on Nigeria, Tai et al. (1990) on Hong Kong, Ahmed and Nicholls (1994) on Bangladesh and Wallace and Naser (1995) on Hong Kong. First, the observation that information disclosure compliance level is low in Zimbabwe is similar to the findings by Wallace (1988), Tai et al. (1990), and Ahmed and Nicholls (1994) in Nigeria, Hong Kong and Bangladesh respectively. The low compliance level with disclosure requirements in emerging economies has been attributed to less stringent disclosure regulatory regime in the literature. This study has also presented empirical evidence in support of the weak monitoring and enforcement systems of disclosure regulatory agencies in these economies.

Second, the result that MNC affiliation positively associate with mandatory disclosure in Nigeria and Bangladesh as reported in Wallace (1988) and Ahmed and Nicholls (1994) respectively was also found in Zimbabwe. However, while Wallace

(1988) found that multinational enterprises with greater equity participation associate positively with disclosure compliance, Ahmed and Nicholls (1994) reported that subsidiaries of MNCs have positive relationship with the level of disclosure compliance. Also, how the MNC affiliation was captured in the present study was wider in scope than these two studies. In this study, MNC affiliation, by definition, encompasses both subsidiary and associate companies.

Third, the result that the extent of mandatory disclosure practices of the sampled companies can not be explained by the quality of external audit (measured by the size of audit firm) conflict with the evidence from prior studies on Bangladesh (Ahmed and Nichols, 1994) and on Hong Kong (Wallace and Naser, 1995), but supports the finding presented in Tai et al.

Finally, but by no means the least, while the result that company size is a predicator of mandatory disclosure practices of listed companies in Zimbabwe as reported in this thesis, it is not so in the context of Hong Kong as reported by Tai et al. (1990). However, the result in Wallace and Naser's (1995) study on Hong Kong indicated that company size, measured by total assets, relate significantly with disclosure comprehensiveness.

Limitations and Suggestions for Further Research

Like all other research studies, the present study has its own limitations, and no claims of perfection are made for it. Thus, the conclusions of this study should be considered in the light of some limitations in the research design.

Here, as in Wallace (1987), the limitations of the present study have been categorised into three, namely conceptual, measurement, and statistical. Conceptually, this study suffers from "the more disclosure the better" syndrome. It has not considered the problems of information over-load that can result from large volume of disclosure.

The following extract from the US FASB's Statement No. 106, *Employers' Accounting for Post-retirement Benefits Other Than Pensions* (Paragraph 356), illustrates the concern of accounting standard-setters about this problem:

> Some Board (FASB) members believe . . . that at some point the sheer volume of all required disclosures may overwhelm users' ability to assimilate information and focus on the more important matters. (Cited in Johnson, 1992, p. 101, [footnote 3])

Although there is no empirical evidence to support the existence of the problem of disclosure over-load in emerging economies, it is suggested here that this problem may be more acute in emerging economies than in developed economies as greater proportion of users of corporate annual reports in the former economies is unsophisticated (see, for example, Jagetia and Nwadike, 1983). It has also been demonstrated analytically, however, that more information is not necessarily better. For instance, Baiman (1975) has shown that while provision of additional costless information can not decrease expected utility in a single-person setting; such an inference does not always hold in a competitive multiple-person setting. Moreover, the literature on information economics has also documented instances where more disclosure is Pareto inferior to less disclosure (see, for example, Hirshleifer, 1971).

Another conceptual problem of this study is that of the meaning of "adequacy." As noted earlier, information disclosed in annual reports and accounts is considered adequate if it is capable of fulfilling user's needs. However, without identifying the users and their respective informational needs it would be difficult to satisfy user's needs. For it to be adequate, the information must: (1) meet the differing needs of *all* the users; (2) be presented in a manner that fosters understanding; and (3) be released on time for it to be relevant to the needs of the users. The adequacy investigated in this study does not embrace the third dimension of "adequacy." To measure the adequacy of mandated information disclosed in the annual reports and accounts of the sample

companies, in the context of the two other dimensions, a disclosure index methodology was employed.

Another limitation of this study is that it investigates a pre-determined checklist of information items deemed to be important to users of corporate annual reports and accounts in Zimbabwe by the standard-setter. Instead, a questionnaire survey should have been undertaken to identify the information items that are valuable to these users as there is no empirical evidence to suggest that the information items mandated by the regulator are, in fact, those needed by these users.

In terms of measurement, the subjectivity problem inherent in scoring the annual reports and accounts of the sample companies may not be completely eradicated. There are unavoidable subjectivity in the scoring process.

The study has assumed, for methodological reasons, that each disclosure item has the same information content. Thus, a disclosed mandated information item is awarded one mark, and zero for a non-disclosure. In the real life, some information items may have higher value to users of corporate annual reports than others. The disclosure items should have been weighted to reflect their individual importance.

The study is limited to information disclosed in corporate annual reports and accounts. Corporate information useful to investors are often disclosed in other media such as interim report, prospectus, and at analysts' conferences. Although the annual report is only one medium by which companies communicate with outsiders, it is assumed to serve as a good proxy for other media such as prospectus, and interim report for the release of corporate financial information. This is because disclosure in corporate annual reports and accounts has been found to positively correlate with disclosures provided through other media (Lang and Lundholm, 1993, p. 258). Also, the annual report has been the focus of the mandatory disclosure index because the annual report has been considered as the most widely disseminated source of

information on publicly held companies (Chang, Most and Brain, 1983; Arnold, Moizer and Noreen, 1984). In particular, it is a major source of official company-specific financial information in Zimbabwe (Oppong, 1993).

In terms of statistical problems, regression analysis does not resolve issues of causality. The existence of a positive correlation does not prove causation. Kerlinger (1973, p. 393) has cautioned that ". . . the study of cause and causation is an endless maze. One of the difficulties is that the word 'cause' has surplus meaning and metaphysical overtones. Perhaps more important, it is not really needed." Consequently, the coefficients of the significant corporate attributes in the regression model should not be viewed as elasticities that predict how much mandatory disclosure will change following a change in any of those attributes. The estimated coefficients of these attributes and their associated *t* statistics rather evaluate the strength of the partial correlation between them and mandatory disclosure.

In addition, while statistical analysis helps to determine the nature of the relationship between company size, ownership structure, company age, MNC affiliation, and profitability and mandatory disclosure, it tells nothing of the *reason* for the observed relationship. Statistical analysis is only a means of measuring company size, ownership structure, company age, MNC affiliation, and profitability and mandatory disclosure and of examining the way in which they are related; it does not of itself explain the relationship.

Another statistical limitation is that the study is a cross-sectional. Thus, the study has investigated mandatory disclosure behaviour of the sample companies at a point in time, that is, the 1994 financial year. "Regulatory environments in different countries are dynamic, not static. They change over time in response to local and international pressures and developments" (Kirsch, 1994, p. 103). Indeed, a longitudinal study would provide an interesting and more complete picture of the

stringency of the disclosure regulation regime in Zimbabwe. Thus, a longitudinal study could be considered in a future research to investigate the trend in improvement or deterioration in disclosure practices of the sample companies.

Notwithstanding the above limitations, the results of this study are sufficiently interesting to warrant an extension to a larger sample size, and of course, to other African countries. A cross-national study will offer a more systematic comparison of different regulatory regimes. A future research may consider a cross-national comparative study either between different emerging stock markets or between developed and emerging stock markets. In addition, a future study may extend this research by investigating the stringency of the two regulatory regimes of the ZSE. Thus, this study can be replicated and then compared with another that investigates the stringency of the regulatory regime currently in operation on the ZSE. The current regulatory regime of the ZSE is modelled on the deterrence style of regulatory enforcement which is different from that investigated in this study. Such an extension will aid policy-makers in the assessment of which of the two regulatory enforcement styles is effective in achieving adequate disclosure in corporate annual reports in Zimbabwe.

In attempting to ascertain which corporate attributes explain the variation in the extent of mandatory disclosure in Zimbabwe, some attributes such as the establishment or otherwise of corporate audit committees, and gearing which may be influential were not considered in this study. Thus, future research may investigate the effects of these corporate attributes on mandatory disclosure.

Another approach that could be adopted in any future research is to model the relationships between corporate attributes and mandatory disclosure as non-linear. As this study has shown, relationship between corporate mandatory disclosure and specific corporate attributes may not always be linear as generally assumed in the literature.

Summary

This chapter has summarised the major results of this study and their possible policy implications. It has also discussed the study's limitations and proposed several areas for further research. While recognising that this study has several limitations, its main findings reported in this thesis are that:

(1) the amount of mandated information provided by ZSE listed companies in their annual audited reports and accounts are inadequate to fulfil the information needs of users of corporate annual report in Zimbabwe;

(2) the corporate mandatory information disclosure and reporting regulatory regime in Zimbabwe is not stringent; and

(3) there is a statistically significant relationship between a number of corporate attributes, namely, company size, ownership structure, company age, MNC affiliation, and profitability and the adequacy of mandatory disclosure in ZSE listed companies annual reports and accounts.

On the whole these results support to the existing literature on disclosure with respect to emerging economies.

PART E

APPENDIXES AND BIBLOGRAPHY

APPENDIX A

SUMMARY OF STUDIES ON CORPORATE ANNUAL DISCLOSURE PRACTICES

Country(ies) studied	Researcher(s) and year of study	Type of disclosure studied	Sample size	Disclosure items examined
I. Developed:				
1. US	Cerf (1961)	n/p	527	31
	Singhvi & Desai (1971)	n/p	155	34
	Buzby (1972)	Mandatory	88	39
	(1974)	Voluntary	88	39
	(1975)	n/p	88	39
	Stanga (1974)	n/p	80	79
	Imhoff (1992)	n/p	185	n/p
	Malone, Fries & Jones (1993)	Mandatory	125	129
	Lang, & Lundholm (1993)	Voluntary	n/p	n/p
2. Canada	Belkaoui & Kahl (1978)	n/p	200	30
	Amernic & Maiocco (1981)	n/p	60	42
3. UK	Firth (1979a)	Voluntary	100	48
	(1979b)	Voluntary		
	(1980)	Voluntary	278	48
	(1984)	Voluntary	100	48
4. Sweden	Cooke (1989a)	Mandatory	90	224
	(1989b)	Voluntary	90	146
5. Japan	Cooke (1991)	Voluntary	48	106
	(1992)	Voluntary & Mandatory	35	n/p
	(1993)	Voluntary & Mandatory	48	195
6. New Zealand	McNally, Eng & Hasseldine (1982)	Voluntary	83	41
	Hossain, Perera & Rahman (1995)	Voluntary	55	95
7. Spain	Wallace, Naser & Mora (1994)	Mandatory	50	16
	Inchausti (1997)	Mandatory & Voluntary	49	50

APPENDIX A (Continued)

SUMMARY OF STUDIES ON CORPORATE ANNUAL DISCLOSURE PRACTICES

Country(ies) studied	Researcher(s) and year of study	Type of disclosure studied	Sample size	Disclosure items examined
II. Emerging:				
8. India	Singhvi (1968)	n/p	45	34
9. South Africa	Firer & Meth (1986)	Voluntary	36	49
10. Nigeria	Wallace (1987)	Voluntary & Mandatory	47	102
11. Mexico	Chow & Wong-Boren (1987)	Voluntary	52	24
12. Hong Kong	Tai, Au-Yeung, Kwok & Lau (1990)	Mandatory	76	10
	Wallace & Naser (1995)	Mandatory	80	30
13. Thailand	Priebjrivat (1992)	Voluntary	63	27[a]
14. Bangladesh	Ahmed & Nicholls (1994)	Mandatory	63	94
	Nicholls & Ahmed (1995)	Voluntary & Mandatory	63	87
15. Malaysia	Hossain, Tan & Adams (1994)	Voluntary	67	78
16. Czech Republic	Patton & Zelenka (1997)	Voluntary & Mandatory	50	37/49/66[b]
III. Cross-national:				
17. Germany, Japan Denmark, Holland, Switzerland, France Sweden, Belgium, Italy, Norway & Australia	Choi (1973a)	Voluntary	36	36
18. Germany, Japan, Sweden, Holland, UK France & US	Barrett (1976)	Voluntary	103	17
	(1977)	Voluntary & Mandatory	103	17

APPENDIX A (Continued)

SUMMARY OF STUDIES ON CORPORATE ANNUAL DISCLOSURE PRACTICES

Country(ies) studied	Researcher(s) and year of study	Type of disclosure studied	Sample size	Disclosure items examined
III. Cross-national (Continued):				
19. France, Sweden & UK	Spero (1979)	Voluntary	60	275[c]
20. Eighteen nations[d]	Kahl & Belkaoui (1981)	Voluntary	70	30
21. Germany, US & Switzerland	Lundbald (1986)	Voluntary	57	n/p
22. Germany, France, US Sweden, UK & Holland	Meek & Gray (1989)	Voluntary	28	10
23. US & UK	Frost & Pownall (1994)	Voluntary & Mandatory	107	n/p
24. US & UK	Gray, Meek & Roberts (1995)	Voluntary	116 for US 64 for UK	128[e]

[a] The items of information were broken down into 68 sub-elements.

[b] The authors constructed three different disclosure indexes to overcome the difficulty in ascertaining those items that were not disclosed from those that were not applicable to the sampled companies. These are "narrow" index, "somewhat broader" index and "broader" index. Each index consists of different number of information items. The "narrow" index consists of 37 items, while the "somewhat broader" index and the "broader" index consist of 49 and 66 items respectively (see Patton and Zelenka, 1997, Appendix B).

[c] There were additional 14 disclosure items for Sweden only.

[d] The sampled countries were: Australia, Austria, Brazil, Canada, Denmark, Finland, France, Germany, Holland, Italy, Japan, Norway, Singapore, Spain, Sweden, Switzerland, UK, and US (Kahl and Belkaoui, 1981, p. 190). This study focused on disclosure practices of banks.

[e] Of the 128 voluntary information items included in the disclosure index, 102 were relevant to US companies, 111 in the case of UK, and 85 were common to companies in both countries.

n/p indicates that the information was either not provided by the researcher(s) or not clear from the published source.

APPENDIX B

CORPORATE MANDATORY ANNUAL DISCLOSURE MEASURING INSTRUMENT

Part A: Corporate Demographic Data

Name of company:_____

Research code:_____

Corporate attributes:

Independent variable No. 1 - Company size:

Market capitalisation (Z$' 000) _____

Total assets (Z$' 000) _____

Independent variable No. 2 - The quality of external audit:

Big Two _____

Non-big Two _____

Independent variable No. 3 - Ownership structure of equity shares:

Proportion of insider holding (%) _____

Independent variable No. 4 - Type of industry:

Conglomerate _____

Manufacturing _____

Mining _____

Others _____

Independent variable No. 5 - Company age:

Age (half-yearly since flotation) _____

Independent variable No. 6 - Affiliation of MNC:

Affiliated _____

Non-affiliated _____

Independent variable No. 7 - Profitability:

Return on turnover(%) _____

Return on capital employed (%) _____

Independent variable No. 8 - Liquidity:

Liquid _____

Illiquid _____

Disclosure scores:

Maximum possible score	_____
Actual score	_____
Relative score (Actual score ÷ Maximum possible score)	_____

Summary of Annual Report Disclosure Items Required of ZSE Listed Companies

	Sub-items	Total
International Accounting Standards:		
1. Inventories	5	
2. Depreciation	4	
3. Disclosure of Information	7	
4. Cash Flow Statement	2	
5. Unusual Items, Prior Period Items	6	
6. Research and Development Activities	4	
7. Contingencies and Events Occurring after Balance Sheet Date	7	
8. Construction Contracts	6	
9. Taxes on Income	8	
10. Segmental Reporting	10	
11. Property, Plant and Equipment	14	
12. Leases	8	
13. Revenue Recognition	4	
14. Retirement Benefit Costs	5	
15. Foreign Currency Transactions	6	
16. Business Combinations	7	
17. Borrowing Costs	1	
18. Related Party Transactions	3	
19. Investments	14	
20. Retirement Benefit Plans	11	
21. Consolidated Financial Statements and Investments in Subsidiaries	9	
22. Investments in Associates	6	147
Companies Act, 1952 (Chapter 190):		
23. Signing and Publishing Accounts	2	
24. Profit and Loss Provisions	7	
25. Balance Sheet Provisions	17	
26. Comparative Figures	2	
27. Directors' Reports	4	
28. Additional Provisions of Holding Companies	5	37
Requirements of the Zimbabwe Stock Exchange:		
29. Employees Share Schemes	2	
30. Directors' Shareholding	4	
31. Borrowing Powers	1	
32. Foreign Borrowings	23	30
Total Maximum Index Score		214

Two hundred and fourteen sub-items from 32 disclosure items.

Part B: Annual Report Disclosure Scoring Procedure

Annual report disclosure requirements of the IASs as adopted for use in Zimbabwe, the Companies Act, and the Listing Agreement of the ZSE are numerically quantified. A company is scored after reading thoroughly its annual report, and awarding marks for each sub-item on dichotomous basis. Thus, disclosure of applicable required information item is scored one for either the specification in Zimbabwe dollars, description or both. Non-disclosure of applicable required information item is scored zero. A firm is awarded a full mark for complete (full) disclosure by specifying and/or describing a required information item as the case may be. Less than full mark is given for partial disclosure. For example, a firm is awarded four marks for fully disclosing all sub-elements of information item no. 2 (depreciation). If, on the other hand, the company discloses only the sub-elements 2.1, 2.3 and 2.4, only three marks are awarded. Where an information item is required under any two or under all the three sources, the problem of duplication is resolved by considering only the most comprehensive of them. This approach was adopted as disclosure is to enable users of corporate reports to make informed economic decisions, and therefore, the source that accomplishes this purpose most efficiently is selected. However, where two or more sources complement each other, they are stated as they are.

Annual Report Mandated Information Items

International Accounting Standards Disclosure Items:

1. IAS 2 - Inventories (Full Marks: 5)

1.1	Method adopted in measuring inventories (1 Mark)	_____	
1.2	Total carrying amount of inventories and the carrying amount in classifications (1 Mark)	_____	
1.3	Amount of inventories pledged as security (1 Mark)	_____	
1.4	The effect of and reasons for changing the accounting policy related to inventories (1 Mark)	_____	
1.5	The circumstances and amount of any reversal of any write down of inventories (1 Mark)	_____	_____

2. IAS 4 - Depreciation (Full Marks: 4)

2.1	Depreciation method used (1 Mark)	_____	
2.2	The useful lives or the depreciation rates used (1 Mark)	_____	
2.3	Total depreciation allocated for the period (1 Mark)	_____	
2.4	Gross amount of depreciable assets and related accumulated depreciation (1 Mark)	_____	_____

3. IAS 5 - Disclosure of Information (Full Marks: 7)

3.1	The name of the enterprise (1 Mark)	_____	
3.2	The country of incorporation (1 Mark)	_____	
3.3	The balance sheet date (1 Mark)	_____	
3.4	The period covered by the income statements (1 Mark)	_____	
3.5	Description of the nature of the firm's activities (1 Mark)	_____	
3.6	The legal form of the enterprise (1 Mark)	_____	
3.7	The currency in which the financial statements are expressed (1 Mark)	_____	_____

4. IAS 7 - Cash Flow Statement (Full Marks: 2)

4.1 Preparation and presentation of cash flow statement for current and prior periods (1 Mark) ____

4.2 Cash on hand and current and other accounts with banks (1 Mark) ____ ____

5. IAS 8 - Unusual Items, Prior Period Items and Changes in Accounting Policies (Full Marks: 6)

5.1 Nature and amount of profit or loss from ordinary activities (1 Mark) ____

5.2 Unusual Items:
(a) Nature and amount of each (1 Mark) ____

5.3 Prior Period Items:
(a) Nature of each item (1 Mark) ____

5.4 Changes in Accounting Policies:
(a) Reasons for the change (1 Mark) ____
(b) Amount and effect of the change (1 Mark) ____
(c) Amount and material effects of a change in accounting estimate (1 Mark) ____ ____

6. IAS 9 - Research and Development (Full Marks: 4)

6.1 Accounting policies adopted (1 Mark) ____

6.2 Amount recognised as expense (1 Mark) ____

6.3 Amortisation methods used or proposed (1 Mark) ____

6.4 Reconciliation of the balance of unamortised development costs at the beginning and at the end of the period (1 Mark) ____ ____

7. IAS 10 - Contingencies and Events Occurring After Balance Sheet Date (Full Marks: 7)

7.1 Existence of contingent loss or gains (1 Mark) ____

7.2 Contingencies:
(a) The nature of the contingency (1 Mark) ____
(b) Uncertain factors that may affect future outcome (1 Mark) ____
(c) An estimate of the financial effect, or a statement that such an estimate cannot be made (1 Mark) ____
(d) Contingent assets and contingent liabilities, quantified if possible (1 Mark) ____

7.3 Events Occurring After Balance Sheets Date:
(a) The nature of the event (1 Mark) ____
(b) An estimate of the financial effect, or a statement that such an estimate cannot be made (1 Mark) ____ ____

8. IAS 11 - Construction Contracts (Full Marks: 6)

8.1 Amount of construction work in progress (1 Mark) ____

8.2 Methods used to determine 8.1 above (1 Mark) ____

8.3 Cash received or receivable as progress payments (1 Mark) _____
8.4 Cash received or receivable as advances (1 Mark) _____
8.5 Amount receivable under cost plus contract not included in construction work in progress (1 Mark) _____
8.6 Amounts attributable to contracts accounted for under completion and the completed contract methods, if both methods are used simultaneously (1 Mark) _____ _____

9. IAS 12 - Taxes on Income (Full Marks: 8)

9.1 Tax Effect:
(a) Accounting method used (1 Mark) _____
(b) Amount of timing differences, both current and cumulative which has not been accounted for (1 Mark) _____
(c) Tax expense related to income from ordinary activities of the enterprise(1 Mark) _____
(d) Tax expense relating to unusual items, prior period items and changes in accounting policy (1 Mark) _____
(e) Tax effects, if any, arising from revaluation of assets (1 Mark) _____
(f) An explanation for the relationship between tax expense and accounting income if not explained by the effective tax rates (1 Mark) _____

9.2 Tax Losses:
(a) Amount of tax saving included in net income for the current period resulting from the realisation of an unaccounted tax loss carried forward (1 Mark) _____
(b) Amount and future availability of tax losses for which the related tax effects have not been included in the net income of any period (1 Mark) _____ _____

10. IAS 14 - Segmental Reporting (Full Marks: 10)

10.1 Industry Segment:
(a) Sales or other operating revenues, distinguishing between revenue derived from customers outside the enterprise and those derived from other segments (1 Mark) _____
(b) Segment results (1 Mark) _____
(c) Segment assets employed, expressed either in amount or as percentage of the consolidated totals (1 Mark) _____
(d) Basis of inter-segment pricing (1 Mark) _____

10.2 Geographical Segment:
(a) Sales or other operating revenues, distinguishing between revenue derived from customers outside the enterprise and those derived from other segments (1 Mark) _____
(b) Segment results (1 Mark) _____
(c) Segment assets employed, expressed either in amount or as percentage of the consolidated totals (1 Mark) _____
(d) Basis of inter-segment pricing (1 Mark) _____

10.3 Reconciliation between the sum of the information on individual segments and the aggregated information in

the financial statement (1 Mark) ____

10.4 If there is any changes in identification of segments and in accounting practices used in reporting segment information, the nature, reasons for and material effect of the changes (1 Mark) ____ ____

11. IAS 16 - Property, Plant and Equipment (Full Marks: 14)

11.1 Valuation bases used in determining the gross carrying amount of each class (1 Mark) ____

11.2 Reconciliation of carrying amount at the beginning and end of the period showing:
(a) Additions (1 Mark) ____
(b) Disposals (1 Mark) ____
(c) Acquisitions through business combinations (1 Mark) ____
(d) Other movements (1 Mark) ____

11.3 Security given in respect of liabilities (1 Mark) ____

11.4 Amount of commitments for future capital expenditure (1 Mark) ____

11.5 Revalued items showing:
(a) Adopted method of revaluation (1 Mark) ____
(b) Policy regarding frequency of revaluation (1 Mark) ____
(c) Details of the independent valuer involved (1 Mark) ____
(d) The nature of any indices used (1 Mark) ____
(e) The year of any appraisal made (1 Mark) ____

11.6 Restrictions on the title to each class, if any (1 Mark) ____

11.7 Separate indication of leaseholds and of assets being acquired on instalment purchase plans (1 Mark) ____ ____

12. IAS 17 - Leases (Full Marks: 8)

12.1 In the books of lessees:
(a) Amount of assets that are the subject of finance leases (1 Mark) ____
(a) Liabilities related to leased assets indicating current and long-term portions (1 Mark) ____
(c) Significant financing restrictions, renewal or purchase options, contingent rentals and other contingencies arising from leases (1 Mark) ____
(d) Amount of commitment for minimum lease payments under finance and non-cancellable operating leases and due periods (1 Mark) ____ ____

12.2 In the books of lessors:
(a) Gross investment in finance leases (1 Mark) ____
(b) Unearned finance income and unguranteed residual values of leased assets (1 Mark) ____
(c) Bases used for allocating income (1 Mark) ____
(d) Amount of assets with related accumulated depreciation, if a significant part of the lessor's business comprises operating leases (1 Mark) ____ ____

13. IAS 18 - Revenue Recognition (Full Marks: 4)

13.1 Amount of each significant category of revenue recognised arising from:
(a) The sale of goods (1 Mark) _____
(b) The provision of services (1 Mark) _____
(c) The use by others of enterprise resources yielding interest, royalties and dividends (1 Mark) _____

13.2 Statement to the effect that revenue recognition has been postponed pending the resolution of significant uncertainties (1 Mark) _____ _____

14. IAS 19 - Retirement Benefit Costs (Full Marks: 5)

14.1 Defined Contribution Plan:
(a) Description of valuation method(s) used (1 Mark) _____
(b) Amount recognised as an expense for the period (1 Mark) _____

14.2 Defined Benefit Plan:
(a) Description of valuation method(s) used (1 Mark) _____
(b) Amount of any shortfall between the net realisable value of the fund assets and the actuarially-determined value of vested benefits (1 Mark) _____
(c) Date of the latest actuarial valuation (1 Mark) _____ _____

15. IAS 21 - Foreign Currency Transactions (Full Marks: 6)

15.1 Cumulative deferred amount of exchange to be credited or charged to income (1 Mark) _____

15.2 Amount of exchange differences arising on liabilities associated with acquisition of assets (1 Mark) _____

15.3 Where foreign operations are incorporated:
(a) Methods used (1 Mark) _____
(b) Net difference for the period taken to shareholders' interest (1 Mark) _____
(c) Net difference for the period taken to income (1 Mark) _____
(d) Procedure selected (closing or average rates) for translating the income statements of those entities (1 Mark) _____ _____

16. IAS 22 - Business Combination (Full Marks: 7)

16.1 For all business combination:
(a) Names and descriptions of the combining entities (1 Mark) _____
(b) Effective date of the combination (1 Mark) _____
(c) Method of accounting for the combination (1 Mark) _____

16.2 For acquisitions, the following in addition to 16.1 above:
(a) Percentage of voting shares acquired (1 Mark) _____
(b) Cost of acquisition and description of purchase consideration paid or payable (1 Mark) _____
(c) Method of treating goodwill or negative goodwill

(1 Mark) ____
(d) Period of amortising any goodwill arising on acquisition (1 Mark) ____ ____

17. IAS 23 - Borrowing Costs (Full Marks: 1)

17.1 Amount capitalised during the period (1 Mark) ____ ____

18. IAS 24 - Related Party Transactions (Full Marks: 3)

18.1 A statement that there have been or have not been related parties transactions (1 Mark) ____
18.2 If there have been transactions between related parties:
(a) Nature of the relationship (1 Mark) ____
(b) Types and elements of transactions (1 Mark) ____ ____

19. IAS 25 - Investments (Full Marks: 14)

19.1 Accounting policies for:
(a) Determining the amount of investments (1 Mark) ____
(b) Treating changes in market value of those stated at market value (1 Mark) ____
(c) Treating revaluation surplus on sale of revalued investment (1 Mark) ____
19.2 Significant amounts included in income for:
(a) Interest, royalties, dividends and rentals on long-term and current investments (1 Mark) ____
(b) Profits and losses on disposal of current investments (1 Mark) ____
(c) Changes in value of such investments (1 Mark) ____
19.3 Market value of marketable investments if they are not carried at market value (1 Mark) ____
19.4 Fair value of long-term investment properties if they are not carried at fair value (1 Mark) ____
19.5 Significant restrictions on realisability of investments or the remittance of income and proceeds of disposal (1 Mark) ____
19.6 For long-term investment stated at revalued amounts:
(a) Policy for frequency of revaluations (1 Mark) ____
(b) Date of latest revaluation (1 Mark) ____
(c) Basis of revaluation and details of the external valuer if any was involved (1 Mark) ____
19.7 Movements in revaluation surplus and their nature (1 Mark) ____
19.8 Analysis of investment portfolio for entities whose main business is the holding of investments (1 Mark) ____ ____

20. IAS 26 - Retirement Benefit Plans (Full Mark: 11)

20.1 Defined Benefit Plan:
(a) A statement showing the net assets available for benefits (1 Mark) ____
(b) Basis of computing actuarial present value of promised

retirement benefits (1 Mark) _____
(c) The effect of any significant changes in actuarial assumptions (1 Mark) _____
(d) Explanation of the relationship between the actuarial present value of promised retirement benefits and the net assets available for benefits (1 Mark) _____
(e) The policy for the funding of promised benefits (1 Mark) _____

20.2 Defined Contribution Plan:
(a) A statement of net assets available for benefits (1 Mark) _____
(b) Description of the funding policy (1 Mark) _____

20.3 A statement of changes in net assets available for benefits (Mark 1) _____

20.4 A summary of significant accounting policies (1 Mark) _____

20.5 Description of the plan and effect of any changes in the plan during the period (1 Mark) _____

20.6 If retirement benefit plan investments are not carried at fair value, the reason why fair value is not used (1 Mark) _____ _____

21. IAS 27 - Consolidated Financial Statements and Investments in Subsidiaries (Full Marks: 9)

21.1 In a case of a parent that is virtually wholly owned:
(a) Reasons why consolidated financial statements have not been presented (1 Mark) _____
(b) Name and registered office of its parent that publishes consolidated statements (1 Mark) _____

21.2 Statement that it was impracticable to consolidate using uniform accounting policies including the proportions of the items to which different accounting policies have been applied (1 Mark) _____

21.3 Analysis of significant subsidiaries indicating their names, place of incorporation, proportion of ownership interest and, if different, proportion of voting power held (1 Mark) _____

21.4 In consolidated financial statements, where applicable:
(a) Reasons for not consolidating a subsidiary (1 Mark) _____
(b) Nature of relationship between parent and a subsidiary which the former does not own more than 50 % of the voting power (1 Mark) _____
(c) Name of an enterprise in which more than 50 % of the voting power is owned, directly or indirectly through subsidiaries, but which, because of the absence of control, is not a subsidiary (1 Mark) _____
(d) Effect of acquisition and disposal of subsidiaries on results and financial position of current and of the preceding periods (1 Mark) _____

21.5 Description of method used to account for subsidiaries in the parent's separate financial statements (1 Mark) _____ _____

22. IAS 28 - Investments in Associates (Full Marks: 6)

22.1 The effect of not using equity method in accounting for

investments in associates if it appears appropriate (1 Mark) _____

22.2 Analysis of significant associates indicating the proportion of ownership interest and, if different, the proportion of voting power held (1 Mark) _____

22.3 Methods used to account for such investments (1 Mark) _____

22.4 Accounting for investments in associates by equity method:
(a) Classified and shown separately as long-term assets in the balance sheet (1 Mark) _____
(b) Share of the profits or losses of such investments shown separately in the income statement (1 Mark) _____
(c) Share of any extraordinary or prior period items (1 Mark) _____ _____

Companies Act, 1952 (Chapter 190) Disclosure Items:

23. Section 123 - Signing and Publishing Accounts (Full Marks: 2)

23.1 Annual report should have profit and loss account, balance sheet, directors' and auditors' reports (1 Mark) _____

23.2 Financial statements approved by the board of directors and signed on their behalf by two directors (1 Mark) _____ _____

24. Seventh Schedule (Sections 59, 119, 122, 124, 130 and 323):

Profit and Loss Account Provisions (Full Marks: 7)

24.1 Amount of dividends paid and proposed (1 Mark) _____

24.2 Interest on debenture and other loans (1 Mark) _____

24.3 Amount provided for the redemption of:
(a) Share capital (1 Mark) _____
(b) Loans (1 Mark) _____

24.4 Auditors' remuneration (1 Mark) _____

24.5 Profit or loss on transactions on shares (1 Mark) _____

24.6 If no provision for taxation has been made, a statement to that effect and the period concerned (1 Mark) _____ _____

Balance Sheet Provisions (Full Marks: 17)

25.1 Fixed assets distinguished from current assets (1 Mark) _____

25.2 Valuation methods used for fixed assets except property, plant and equipment (1 Mark) _____

25.3 Particulars of debentures that have been redeemed which the company has power to re-issue (1 Mark) _____

25.4 Aggregate amounts of:
(a) Capital reserves (1 Mark) _____
(b) Revenue reserves (1 Mark) _____
(c) Other reserves other than for depreciation (1 Mark) _____

25.5 Schedule in respect of items in 25.4 above showing:
(a) Balance at the beginning of the year (1 Mark) _____
(b) Additions during the year (1 Mark) _____
(c) Deductions during the year (1 Mark) _____

(d) Balance at the end of the year (1 Mark) _____

25.6 Authorised share capital:
(a) Number and amount of each class (1 Mark) _____

25.7 Issued share capital:
(a) Number and amount of each class (1 Mark) _____
(b) Portion consisting of redeemable preference shares and the earliest date of redemption (1 Mark) _____

25.8 Amount of share premium account (1 Mark) _____

25.9 Any share capital on which interest has been paid out of capital and the rate of the interest (1 Mark) _____

25.10 Number, description and amount of shares which any person other than directors has option to subscribe indicating the period in which it is exercisable and the price payable (1 Mark) _____

25.11 Amount of shares which members have authorised or given the option to directors to issue to themselves including the terms of such authority and the period for which it is granted (1 Mark) _____ _____

Comparative Figures (Full Mark: 2)

26.1 Corresponding amount of profit and loss accounts items of the preceding financial year (1 Mark) _____

26.2 Corresponding amount of balance sheet items of the preceding financial year (1 Mark) _____ _____

27. Section 124 - Directors' Report (Full Marks: 4)

27.1 Statement on any change in the nature of its business and/or those of its subsidiaries (1 Mark) _____

27.2 Amount paid, declared or recommended to be paid by way of:
(a) Dividend (1 Mark) _____
(b) Reserves (1 Mark) _____

27.3 Directors' remuneration recommended (1 Mark) _____ _____

28. Seventh Schedule Part II - Additional Provisions Required of Holding Companies (Full Marks: 5)

28.1 Where group accounts are not prepared:
(a) Amount transferred from the subsidiaries' profits after deducting the subsidiaries' losses (or vice versa) so far as it concerns the interest of the holding company (1 Mark) _____
(b) Amount so transferred so far as it is dealt within the company's accounts (1 Mark) _____
(c) Any qualifications contained in the auditors' report of the subsidiaries (1 Mark) _____

28.2 If financial year of subsidiaries are not coinciding with that of the holding company:
(a) Reasons why the company's directors consider that to be appropriate (1 Mark) _____

(b) Dates on which the subsidiaries' financial years ending last before that of the company (1 Mark) ____ ____

The Zimbabwe Stock Exchange Continuous Disclosure Items:

29. Part D (Paragraph 7 [iv]) Employees Share Schemes (Full Mark: 2)

29.1 Number of shares issued or under option (1 Mark) ____
29.2 Changes in the number during the year including the balance available to shareholders (1 Mark) ____ ____

30. Part D (Paragraph 9) Directors' Shareholding (Full Marks: 4)

30.1 Directors' interest in the company's share capital:
(a) Beneficial (1 Mark) ____
(b) Non-beneficial (1 Mark) ____
30.2 Changes in interest occurring between the year end and one month before notice of the AGM (1 Mark) ____
30.3 Comparative figures for the previous year (1 Mark) ____ ____

31. Part D (Paragraph 9) Borrowing Powers (Full Mark: 1)

31.1 The company's level of borrowings as authorised in its Articles of Association (1 Mark) ____ ____

32. Supplementary Requirements for Foreign Borrowings (Full Mark: 23)

32.1 Amount of loan borrowed:
(a) The denomination of the foreign currency (1 Mark) ____
(b) Amount in both foreign currency and Zimbabwe dollars (1 Mark) ____
32.2 Terms of loans:
(a) The period of the loan (1 Mark) ____
(b) Repayment schedule showing separately the capital and interest payments in both foreign currency and Zimbabwe dollars (1 Mark) ____
(c) Interest rate(s) and details if subject to change (1 Mark) ____
(d) Purpose for which the loan(s) were taken (1 Mark) ____
(e) Details of which or what part of the loan(s) are covered and uncovered (1 Mark) ____
(f) The exchange rate(s) at which the loan(s) and interest have been translated in the financial statements (1 Mark) ____
32.3 Exchange rate risk:
(a) Sensitivity analysis showing separately the effects of a change in the foreign exchange rates on the profit and loss account, balance sheet and cash flow statement (1 Mark) ____
32.4 Uncovered loans:
(a) Outstanding amount in foreign currency and Zimbabwe dollars (1 Mark) ____
(b) Reconciliatory statement showing movements in

uncovered loans from year to year (1 Mark) _____

32.5 Fully covered loans:

(a) Outstanding amount in Zimbabwe dollars converted at forward cover rate and foreign currency equivalent (1 Mark)_____

(b) Details of the cost of cover when it is taken out or renewed (1 Mark) _____

32.6 Partly covered loans:

(a) Uncovered portion of the loan(s) in accordance with 32.4 above (1 Mark) _____

(b) Covered portion of the loan(s) in accordance with 32.5 above (1 Mark) _____

(c) Details of unexpired period of cover (1 Mark) _____

32.7 Interest:

(a) Statement that the interest is covered forward or not (1 Mark) _____

32.8. Accounting Policy: A note of accounting treatment in respect of:

(a) Capitalisation of exchange losses and interest and the amounts thereof (1 Mark) _____

(b) Exchange losses charged to the profit and loss account and the amount thereof (1 Mark) _____

(c) Provisions made for exchange losses and the amount thereof (1 Mark) _____

32.9 General Disclosures:

(a) If the foreign loan(s) have been hedged against future export earnings, a statement of this fact (1 Mark) _____

(b) Details of export earnings (1 Mark) _____

(c) Distinction between local and export markets (1 Mark) _____ _____

APPENDIX C

MANDATORY DISCLOSURE SCORES OF THE SAMPLE COMPANIES

Sample company	Research code	Industry-type	Mandatory disclosure score	Rank
African Distillers	A001	Manufacturing	75	9
Apex Corporation	A002	Conglomerate	74	10
Art Corporation	A003	Manufacturing	78	6
BAT Zimbabwe	B004	Manufacturing	82	3
Bindura Nickel	B005	Mining	66	17
Border Timbers	B006	Manufacturing	74	10
Cairns Holdings	C007	Manufacturing	81	4
Capri Group	C008	Conglomerate	85	1
CAPS Holdings	C009	Manufacturing	74	10
Central African	C010	Manufacturing	82	3
Circle Cement	C011	Manufacturing	78	6
Clan Holdings	C012	Transport†	74	10
Cluff Resources	C013	Mining	75	9
Colcom Holdings	C014	Manufacturing	76	8
C & I Holdings	C015	Conglomerate	78	6
David Whitehead	D016	Manufacturing	75	9
Delta Corporation	D017	Conglomerate	75	9
Dunlop Zimbabwe	D018	Conglomerate	78	6
Edgars Stores	E019	Retailing†	78	6
Falcon Gold	F020	Mining	67	16
FP Holdings	F021	Manufacturing	77	7
FSI Holdings	F022	Conglomerate	72	12
Gulliver Consolidated	G023	Conglomerate	77	7
Haddon & Sly	H024	Retailing†	75	9
Hippo Valley	H025	Agriculture†	68	15
Hunyani Holdings	H026	Conglomerate	74	10
International Holdings	I027	Conglomerate	70	13
Johnston & Fletcher	J028	Conglomerate	67	16
Kadoma Consolidated	K029	Conglomerate	64	18
Mashonaland	M030	Conglomerate	74	10
National Foods	N031	Conglomerate	70	13
National Tyres	N032	Manufacturing	72	12
PG Industries	P033	Conglomerate	73	11
Portland Holdings	P034	Manufacturing	80	5
Rio Tinto	R035	Mining	84	2
Rothmans	R036	Conglomerate	70	13
TA Holdings	T037	Conglomerate	73	11
Tabex Holdings	T038	Conglomerate	75	9
Tanganda Tea	T039	Conglomerate	74	10
Tedco	T040	Conglomerate	72	12
Truworths	T041	Conglomerate	63	19
TSL	T042	Conglomerate	72	12
Wankie Colliery	W043	Mining	82	3

Appendix C (Continued)

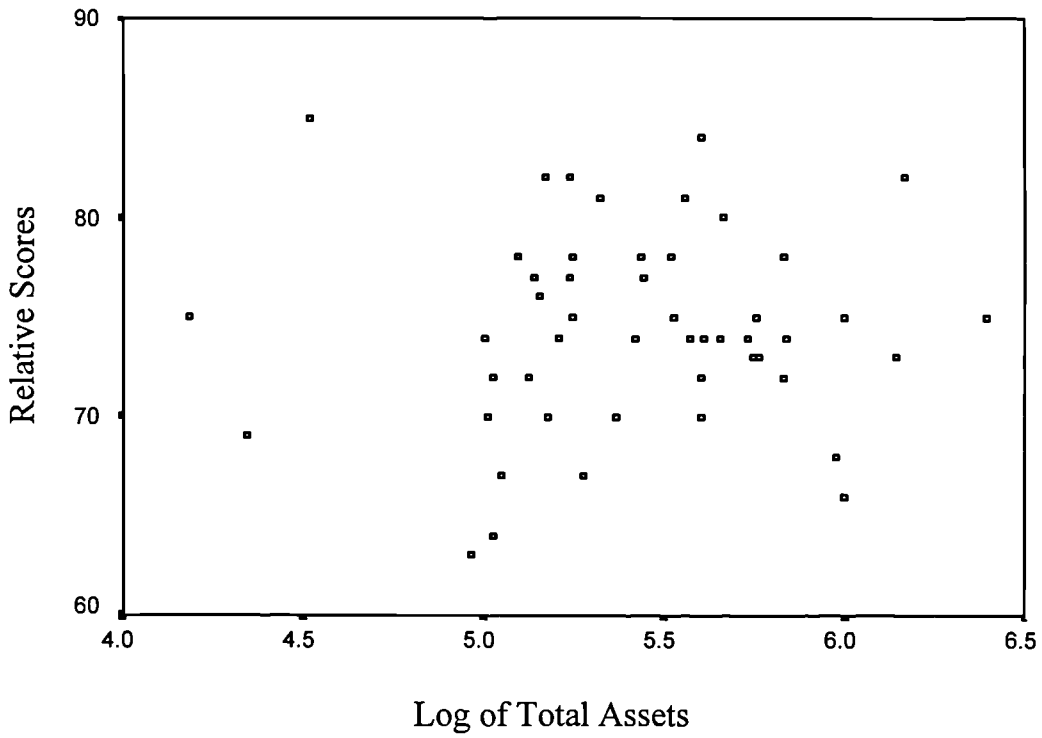
MANDATORY DISCLOSURE SCORES OF THE SAMPLE COMPANIES

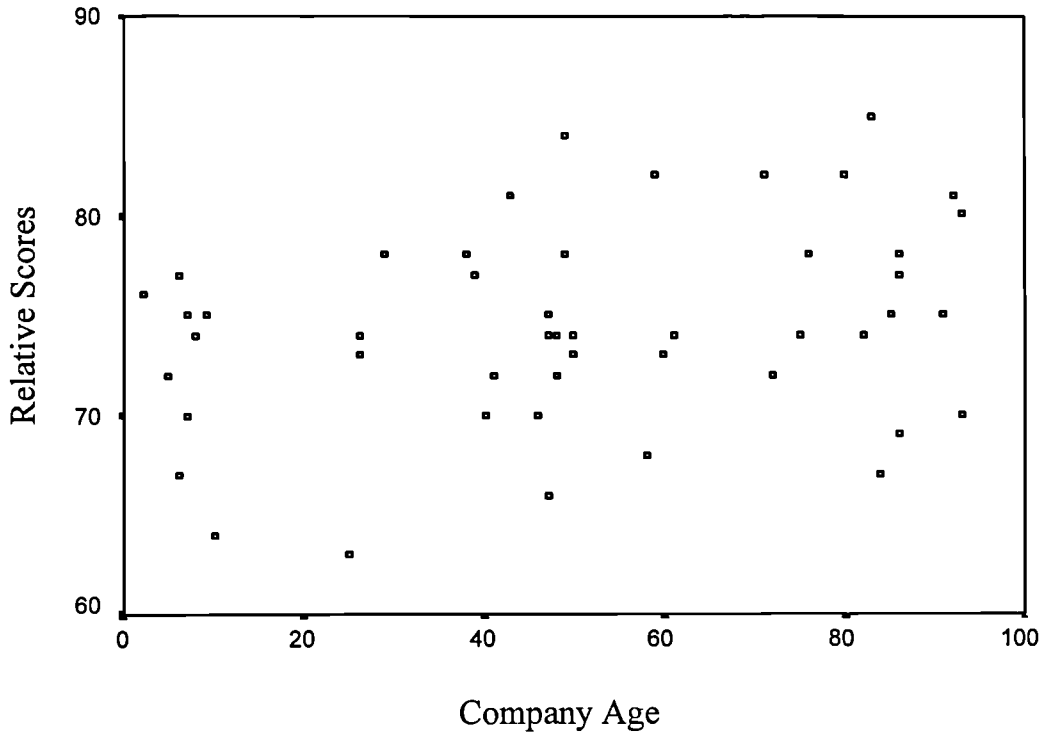
Sample company	Research code	Industry-type	Mandatory disclosure score	Rank
Zimbabwe Alloys	Z044	Mining	73	11
Zimbabwe Newspapers	Z045	Communication†	77	7
Zimbabwe Spinners	Z046	Manufacturing	81	4
Zimbabwe Sun	Z047	Hoteling†	74	10
Zimplow	Z048	Manufacturing	69	14
ZSR Corporation	Z049	Conglomerate	70	13

† These were classified as "others" for the purposes of statistical analysis.

APPENDIX D

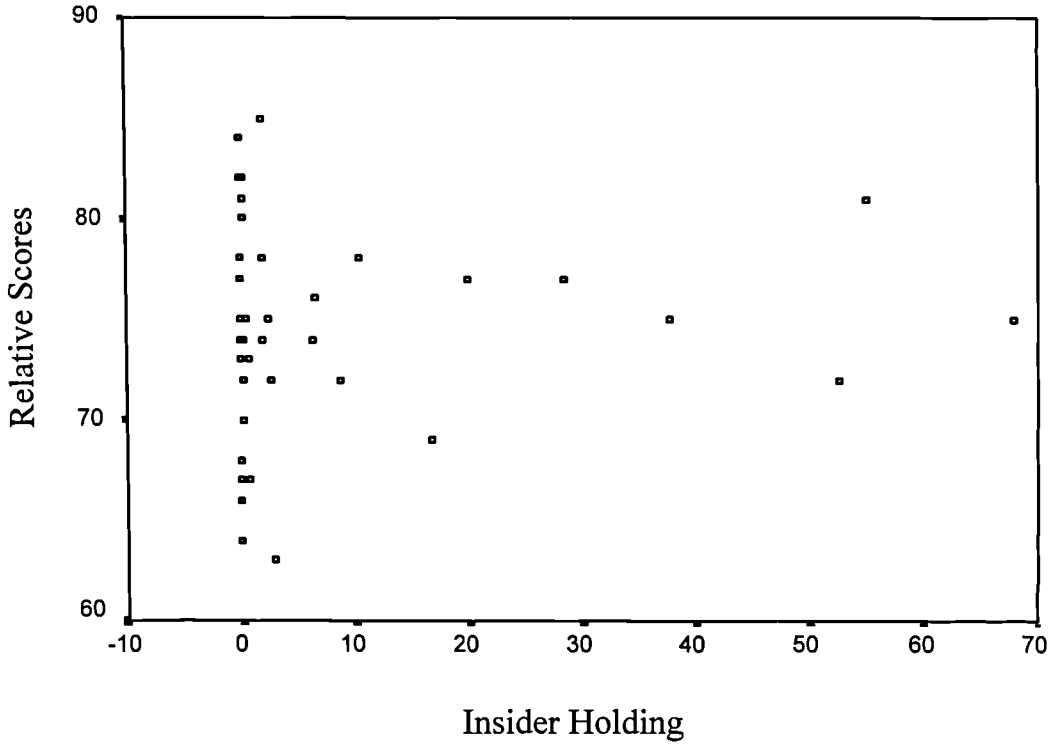
SCATTER PLOTS OF COMPANY SIZE, COMPANY AGE, OWNERSHIP STRUCTURE AND PROFITABILITY, AND MANDATORY DISCLOSURE





APPENDIX D (Continued)

SCATTER PLOTS OF COMPANY SIZE, COMPANY AGE, OWNERSHIP STRUCTURE AND PROFITABILITY, AND MANDATORY DISCLOSURE



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